JRC

CATALOGUE 2020

NAUTICAL SUPPLIES

CONTENTS

MULTI INFO DISPLAY

NWZ-4610

The 4.5-inch intelligent Multi Info Display (MID) features an aesthetic and harmonized design which is a new addition to JRC's comprehensive product line.

KEY FEATURES

- 4.5-inch high brightness display
- Dual color LED backlight
- Power distribution up to 3 displays
- Data and dimmer share up to 10 displays
- 3 in/outputs (NMEA0183)
- Long LCD life
- No flush mount kit required

NWZ-4610 SPECIFICATIONS	
RoHS	v
Display unit	4.5-inch monochrome LCD (128 by 64 dots)
Backlight	White and orange LED selectable
Dimmer levels	Bright, medium, dark, off
Dimmer control	Keys or external control
Contrast	13 levels
Keys	12 (backlit) keys
Power supply voltage	10.8-31.2V DC (optional power supply 100-120V/200-240V AC)
Power consumption	Less than 2.5W
Alarm indication	Sound and/or LCD backlight color change
Display modes	6 (full screen, two sections, three sections, four sections, special, graphic)
Graphical display mode	Speed, Rudder angle, Wind direction, Water depth, Water temp
Selectable units	Speed/Wind: kn, km/h, mi/h, m/s, Temp: °C, °F, Distance: NM, km, mi, m, Depth: m, ft, fm
Interfacing	Power/Data: 12-24V DC, serial 3 in/output (RS-422), contact 1 in/output Data 1: serial 1 in/output (RS-485) for data/dimmer sharing Sensor/Data 2: serial 1 in/output (sensor) or daisy chain
NMEA0183 version	1.5, 2.1, 2.3, 4.0
Bit rate	RS-422: 4800, 9600, 19200, 38400 RS-485: 38400, 57600, 76800, 115200
Data/dimmer share	NMEA data/dimmer share up to 10 units (RS-485)
Power distribution	Daisy chain up to 3 units
Languages	English, Japanese
Software update	Through PC
Diagnosis	ROM, RAM, serial ports, LCD, Buzzer
Demo mode	Built-in
Installation	Flush, Table
RMS	Available
Ambient conditions	Temperature: -15 to 55°C (operating) -25 to 70°C (storage) IP protection rate: IP55 Relative humidity: 0% to 93% non-condensingsince

NWZ-4610 Weight 600 g (+ bracket 130 g)

DGPS RECEIVER

JLR-4341 (DGPS224)

KEY FEATURES

- Internal Differential Beacon Receiver
- Capable of SBAS (WAAS/EGNOS/MSAS) correction
- RAIM function is available
- 12-Channel Parallel for simultaneous reception of 12 satellites
- IEC61162-1, NMEA0183 Output

Internal SBAS receiver

The DGPS224 includes SBAS(MSAS/WAAS/EGNOS) receiver. By using SBAS you can achieve precise position.

Internal Differential Beacon Receiver

The DGPS224 includes a beacon receiver and GPS receiver. By using DGPS you can achieve true DGPS accuracy.

RAIM function

The accuracy of position fixes in self-tested by the DGPS224.(RAIM function) This function assures higher reliability to the position fix than conventional method.

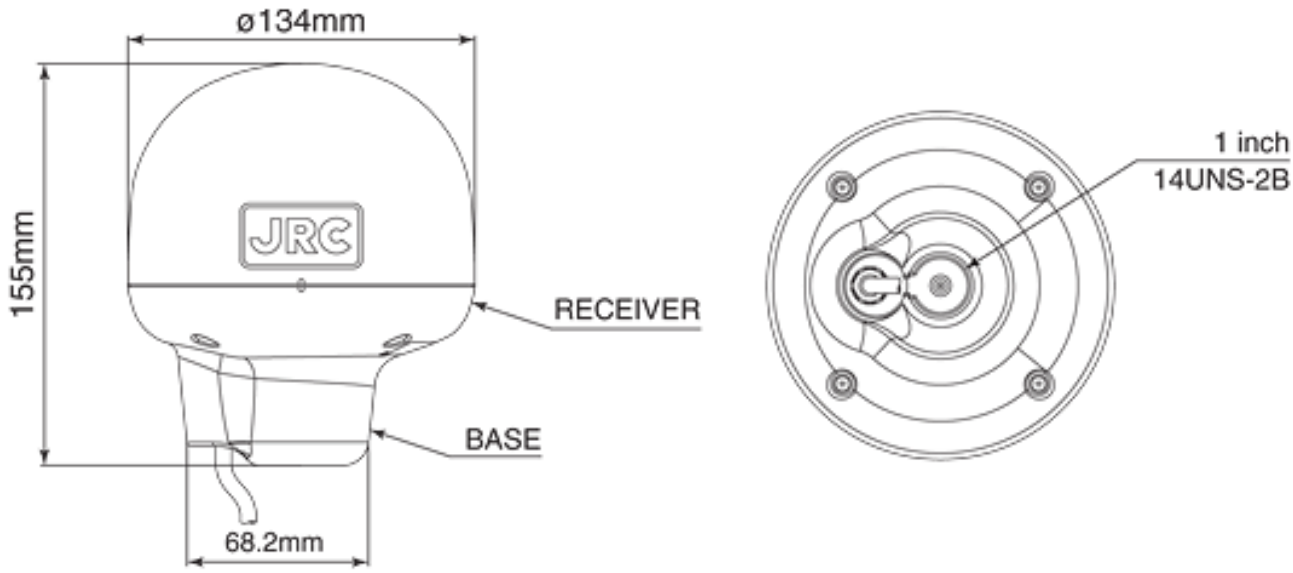
12-Channel Parallel for Receiving 12 Satellites Simultaneously

The DGPS224 is designed to simultaneously receive signal from 12 orbiting satellites, ensuring the most accurate positioning. And also, typically 40 seconds for first position fixing without GPS almanac data.

IEC61162-1, NMEA0183 Output

Since the output data is changeable IEC61162-1, NMEA0183 version1.5, 2.1 and 2.3, you can connect the DGPS224 to various marine electronics equipment such as marine radars, fishfinders, plotters or others.

JLR-4341 SPECIFICATIONS	
Receiver type	Multichannel (12-CH, SBAS 1-CH) all-in-view
Frequency	1575.42MHz±1MHz (C/A code)
Sensitivity	-135dBm for tracking
Accuracy	3m 2DRMS (C/A code, HDOP≦4, SA OFF) 5m 2DRMS when DGPS corrected 7m 2DRMS when SBAS corrected
Time to first fix	Typically 40 seconds (cold start fix) Typically 33 seconds (warm start fix)
Position update	Normally every 1 seconds
DGPS input	RTCM SC-104 ver.2.0 type1,2,7,9 available
Data output	Signal output port, TTL level IEC61162-1, NMEA0183 ver.1.5/2.1/2.3 selectable IEC61162-1, ver.2.3 GGA, RMC, VTG, ZDA, DTM, GBS, GNS ver.1.5 GGA, RMC, GLL, VTG ver.2.1 GGA, RMC, GLL, VTG, DTM
Beacon frequency	283.5～325kHz
Selection of beacon S.T	Auto / Manual
Geodetic datum	46 (WGS-84, WGS-72, Japan, America, Canada/Alaska, Europe, Australia,England, NAD-83, other 37)
Power	12/24VDC +30%, −10% (less than 2.5W)
Operating temperature	−25～+55˚C



Mass less than 1.7 kg

GPS RECEIVER

JLR-4350
GPS-134

SUPPLIED ITEMS:

GPS Sensor, Cable Guard Rubber, Instruction Manual.

Options:
Screw adapter, Mounting band, Extension Cable

KEY FEATURES

- Multi GNSS Sensor
  The JLR-4350 can implement High reliability by the multi-GNSS receivers. (GPS/GLONASS/BeiDou/QZSS/SBAS)
- SBAS function
  The JLR-4350 can implement DGPS measurement by receiving the correction data from SBAS satellite (WAAS/EGNOS/MSAS), and can achieve the measurement of high accuracy than the GPS measurement.
- RAIM function
  The accuracy of position fixes is self-tested by the equipment. (RAIM function). This function assures higher reliability to the position fix than conventional method.
- 22-channel, 22-satellite tracking, and all in view.
  Highly accurate position fixing is ensured by simultaneous tracking of up to 22 satellites by 22 channels.
- Switching between IEC61162-1 NMEA0183 versions 1.5, 2.1, 2.3 and 4.0. The data output conforms to IEC61162-1 or NMEA 0183, and version switching is possible. This feature allows the unit to be connected with various types of marine equipment including radars, fish finders, and plotters.

JLR-4350 SPECIFICATIONS	
Sensor Type	Multi GNSS (GPS/GLONASS/BeiDou/QZSS/SBAS). Can not receive GLONASS and BeiDou at the same time.
Maximum Number of Tracked Satellites	22 Satellites
Accuracy	5m 2DRMS (GPS) HDOP≦4 SA off 4m 2DRMS (Beacon DGPS) 4m 2DRMS (SBAS) 4m 2DRMS (Multi GNSS)
SBAS	WAAS, MSAS, EGNOS
QZSS	QZSS (L1-C/A) No.1 Satellite only
Geodetic Datum	Selection among 48 geodetic datum (Default：WGS-84)
Data output	Selection among NMEA0183, IEC61162-1 Selection among NMEA0183 Version 1.5, 2.1, 2.3, 4.0 (Default：Version 1.5)
Compass safe distance	Standard:1.0m Steering:0.7m
Power Supply Voltage	DC12/24V（+30%,-10%）
Power Consumption	Less than 1.0W
Dimension	φ134mm×129Hmm
Mass	Approximately 1.2kg (Include 15m cable)
Operation Temperature	-25～+55℃
Storage Temperature	-25～+70℃
Vibration	IEC60945 ed.4 conformant
EMC	IEC60945 ed.4 comformant
Waterproof	IP56

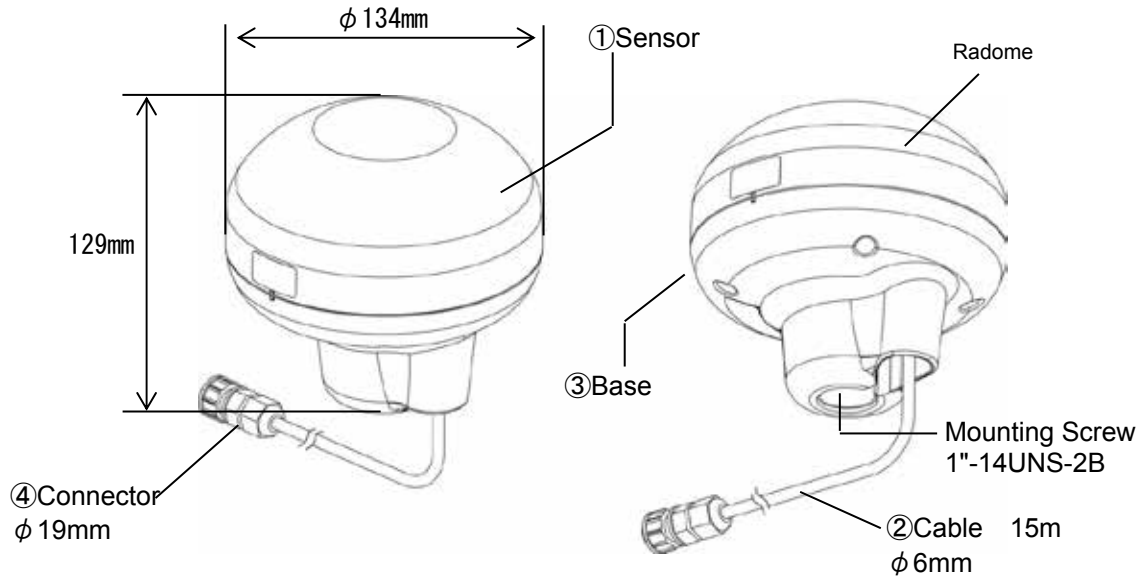


Fig. 2.1 Parts of JLR-4350

Mass：Approx. 1.2kg
(Include 15m cable)

GPS COMPASS

3D DYNAMIC SENSOR™
JLR-21

The JLR-21 GPS compass continues the success of its predecessor, reaching a new level of performance and stability with many new features and enhancements. This system is also known as a 3D Dynamic Sensor™, which besides giving heading information, is designed to provide highly accurate information of the ships movement in all axis.

KEY FEATURES

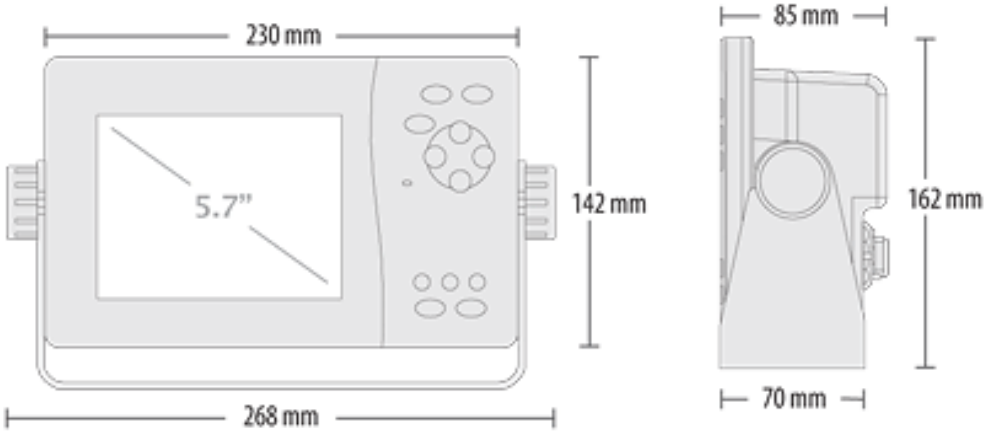
- 5.7-inch high visibility display
- Roll, pitch, rate of turn and heave integrated
- IMO type-approved as Transmitting Heading Device(THD) and Satellite navigator(GPS)
- High speed tracking response (ROT 45°/sec)
- Wide range of new display modes available
- Dynamic heading accuracy 0.5° rms

OPTIONS

CFQ5374

JLR21 DATA CABLE FOR CONNECTING RADAR (3 METRE LEAD)

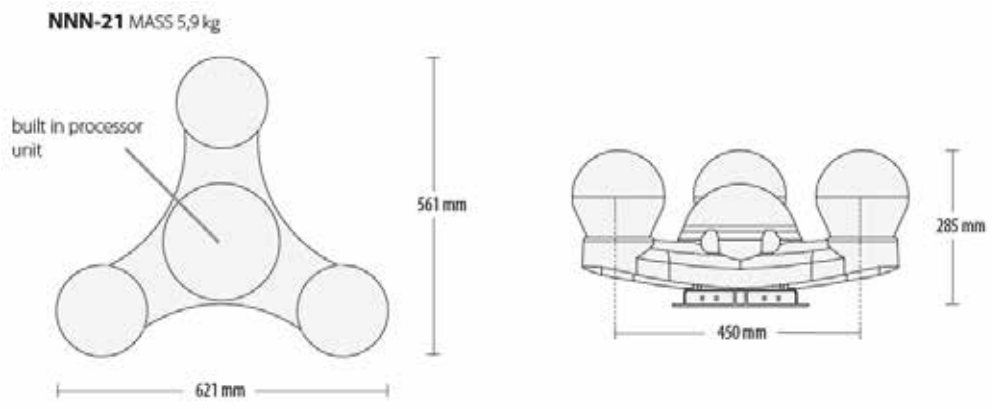
NWZ-4701 MASS 2,3 kg



Cutout dimensions for flush mounting

Height	116 mm
Width	220 mm
Depth	64 mm

JLR-21 SPECIFICATIONS	
IMO approved	(THD) V (GPS) V
Power	12 to 24V DC (-10% to +30%)
Power consumption	12W (including sensor), 6W (excluding sensor)
Vibration/EMC	IEC60945 ed4
Sensor	
Model	NNN-21
Receiver Type	Multi channel all-in-view (12ch + 1ch SBAS)
Frequency	1575.42MHz ± 1MHz(C/A code)
Direction accuracy	0.5º rms
Rolling accuracy	0.5° rms
Pitching accuracy	0.5° rms
Heaving accuracy	20cm rms
Display resolution	0.1º
Resolution output	0.1º or 0.01º (selectable)
Tracking Rate of Turn	45º / sec
Tracking acceleration	1G
Start-up time	less than 2 minutes (warm start fi x, typically 30 seconds)
DGPS input	RTCM SC-104 Ver.2.0 Type 1, 2, 9, 16
SBAS receiver	Built-in(MSAS/WAAS/EGNOS)
RAIM function	Built-in
Position accuracy	GPS : 12m 2drms (C/A code, HDOP≦4, SA OFF) SBAS : 6m 2drms when SBAS corrected DGPS : 4m 2drms when DGPS corrected (when connected to beacon receiver)
Protection	IPX6
Ambient conditions	-25 to +55°C (operational) -25 to +70°C (storage)
Display	
Model	NWZ-4701
Display	5.7-inch LCD, 320 by 240 pixels
Display modes	Compass rose, bow heading, navigation, rate of turn (ROT), water/ground speed, trend graph, calculation, GPS status
Direction & nav. data output 1)	IEC61162/NSK(shared) 5 ports (AD-10 output availuable: 2 of 5 ports) IEC61162 output: HDT, THS, ROT, ZDA, GGA, VTG, RMC, GBS, DTM, GSA, GSV, GNS, MSS, GST, GLL, ALR, ATT, HVE
Current data input	1 port(CUR, VBW)
Alarm contact signal	2 ports (alarm output) 1 port (ACK input)
LOG pulse	1 port (off , 200p/NM, 400p/NM)
Protection	IPX4
Ambient conditions	-15 to +55°C (operational) -25 to +70°C (storage)



GPS NAVIGATOR

JLR-8400/8600

JLR-8400

JLR-8600

Multi-GNSS sensor JLR-4350

Both JLR-8400 and JLR-8600 are reliable and accurate GPS navigators which carry the same JRC DNA with uniform design and intuitive, trusted operation. Combined with the new multi-GNSS sensor you are ensured of accurate positioning without compromise.

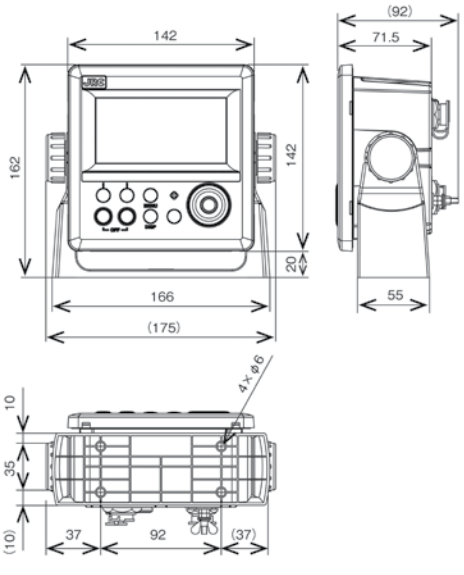
KEY FEATURES

- High reliability
- Flexibility system configuration
- Multi-GNSS sensor
- IMO approved
- Up to 22 satellite signal trackable
- Complete and compact
- Intuitive and trusted operation
- High accuracy
- Easy to install
- Remote maintenance possible

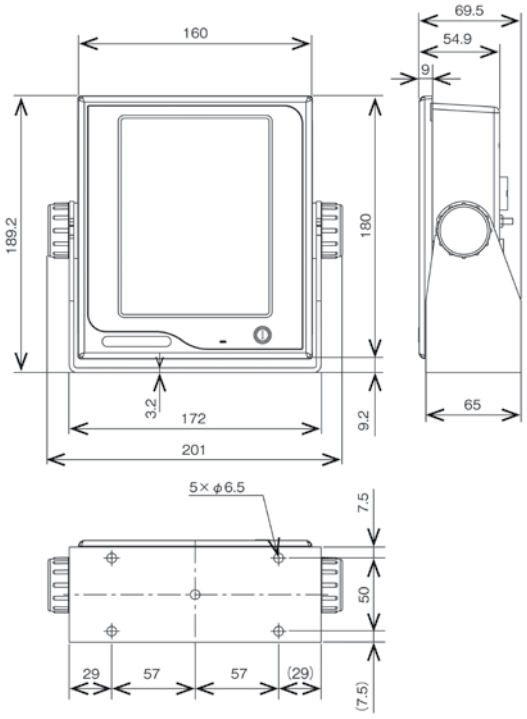
JLR-8400/8600 SPECIFICATIONS

Model	JLR-8400	JLR-8600
Units	2	3
Route sharing with LAN	n / a	ECDIS / Radar / Navigation system
Waypoint	1,000	10,000
Routes	20 (50 waypoint / route)	100 (512 waypoint / route)
Alarm log	40	100
Model	Display unit : NWZ-1650 Processor unit : NDC-4100	Display unit : NWZ-4620
Display	6.5 inch TFT color LCD	4.5 Inch monochrome LCD
	640×480 dots　VGA　 Brightness : 800 cd/m2	128×64 dots
Backlight	17 steps	White or orange
Memory	Waypoints : 10,000 points Event/Mark : 1,000 points Route : 100 routes Track : 2,000 points	Waypoints : 1,000 points Event/MOB : include in waypoints Route : 20 routes Track : 2,000 points
Plot function scale	0.2, 0.5, 1, 2, 5, 10, 20, 50, 100, 200, 300 NM	0.125, 0.25, 0.5, 1, 2, 5, 10, 20, 50, 100 NM
Plot interval	1 - 60 min (1 sec) or 0.01 - 99.99 NM (0.01 NM) selectable	
Navigation calculation	Grate circle or rhumb line selectable	
Screen mode	Navigation information screen, plotting screen, analogue screen, highway screen, satellite information screen, waypoint information screen, beacon text screen, navigation aid screen	Navigation screen, PLOT screen, GPS information screen, beacon information screen, CDI screen, distance screen, speed screen, reception information screen, waypoint information screen
Alert	Arrival, anchor, boundary, XTD, no position fix, speed, trip, HDOP, temperature, depth	Arrival, anchor, XTD, no position fix, speed, trip, HDOP
Unit	Distance speed: NM, kn, km, km/h, mi, mi/h	
Buffer/select switch	Built-in	Option
Dual power supply	Available	None
Power supply voltage	DC12 / 24 V : 2.0 A	DC12 / 24 V : 0.5 A
Power consumption	25 W (JLR-4350)	7 W (JLR-4350)

JLR-8400



JLR-8600



VHF RADIOTELEPHONE

JHS-770S/780D

Available as semi-duplex or full-duplex, this class A VHF radiotelephone incorporates advanced modular design that allows for maximum installation flexibility.

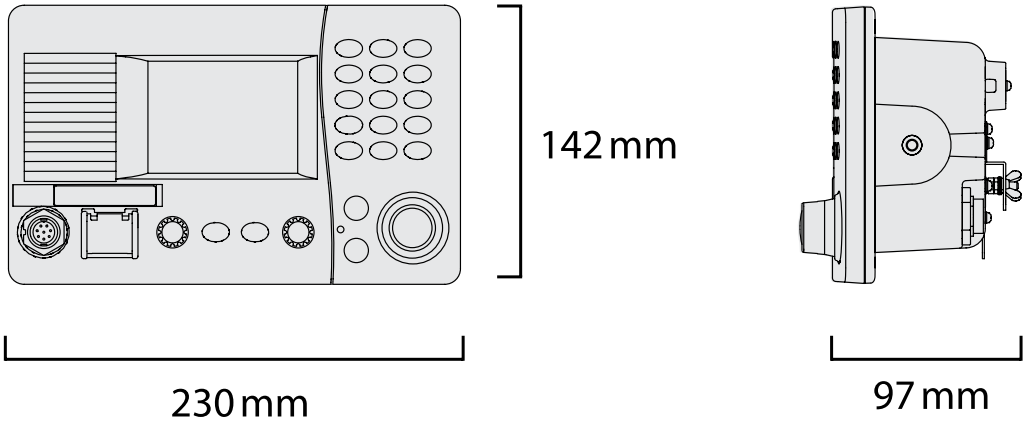
KEY FEATURES

- Direct call by AISTM
- Intercom and loudhailer
- Clear display
- Extendable up to 5 controllers
- 120 seconds digital recording
- Wing controller
- Easy configuration
- Easy operation

DIRECT CALL BY AIS

When connecting your AIS to the new VHF, new possibilities become available. This innovative feature, unique to JRC, allows you with one push of the button, to quickly navigate through a list of targets in your surrounding area. Bearing, range and MMSI information of target vessels are sorted from the shortest range upwards. You can now easily select the vessel you wish to get in contact with, and send a DSC message immediately.

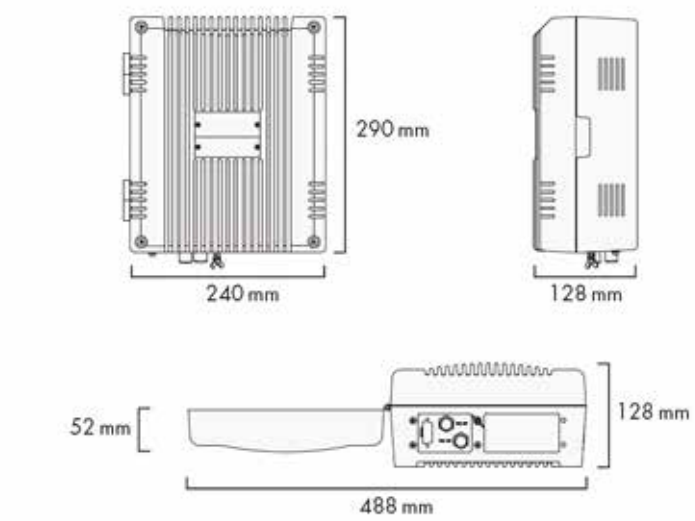
NCM-1770 MASS 1.3k g



JHS-770S/780D SPECIFICATIONS

Model	JHS-770S	JHS-780D
GMDSS compliance	v	
General		
Communication mode	simplex/semi-duplex	simplex/duplex
Frequency range	155.00 - 163.50MHz	
TX	155.00 - 163.50MHz (simplex/semi-duplex), 156.00 - 157.45MHz (duplex)	
RX	155.00 - 163.50MHz (simplex/semi-duplex), 160.60 - 162.05MHz (duplex)	
Output power	25W/1W	
Modulation type	radiotelephone G3E/F3E, DSC/ATIS G2B/F2B	
Channel spacing	25kHz	
Frequency accuracy	within ±10x10-6	
Antenna impedance	50Ω unbalanced	
DSC CH70 receiver	built in	
DSC CH70 frequency	156.525MHz	
DSC received message LOG	20 distress messages 20(TX)+20(RX) non-distress messages	
Channel capacity		
ITU/USA/Canada	57 channels max	
Inland Waterway	57 channels max	
Private	200 channels max (channel steps: 25kHz, 12.5kHz, 10kHz)	
Weather	10 channels max	
Memory	10 channels max	
Inputs		
IEC-61162-1	GPS	
IEC-61162-2	AIS	
Outputs		
IEC-61162-1	VDR/S-VDR	
Audio	600Ω 0dBm balanced (to VDR/S-VDR), unbalanced (to ext. loudspeaker)	
RS232C	for external printer NKG-91 and DPU-414	
Environmental conditions		
Power voltage	DC 24V +30% -10%	
Current consumption	DC 24V input, 8.3A max	
Ambient condition	temperature: -15°C +55°C (range for full performance 0°C +40°C)	

NTE-770S MASS 6.3kg
NTE-780D MASS 6.9kg



VHF RADIOTELEPHONE

JHS-800S

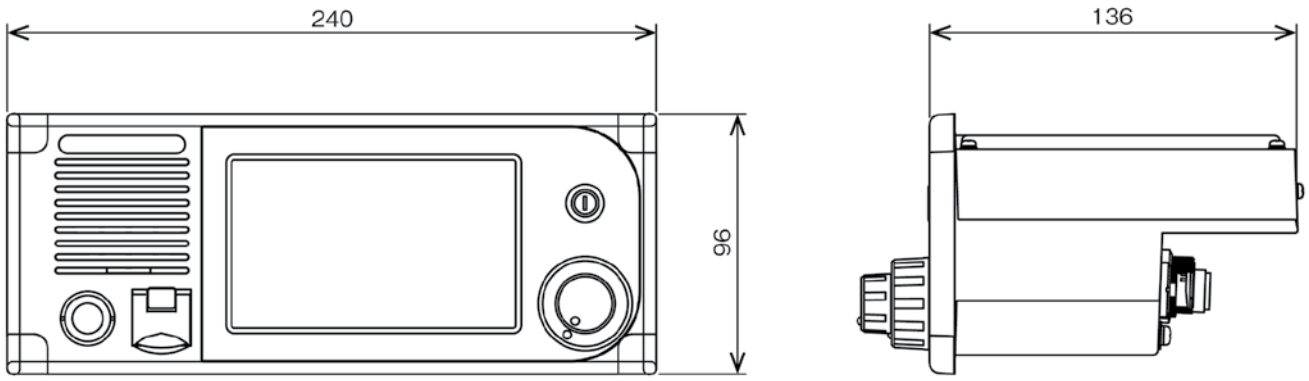
Intuitive touch display operation

The new 5-inch touch screen controlled Class A VHF radio featuring a uniform, corporate design with manual-free operation. The all-in-one unit (control unit with speaker, radiotelephone and DSC) has high sensitivity performance, Hi-Fi output and protection rate of IP56.

KEY FEATURES

- Easy operation
- Up to 4 remote controllers
- 5-inch color LCD touch display
- All-in-one design
- Class A DSC complying latest GMDSS requirement
- New designed speaker and handset
- High quality sound (Hi-Fi audio)
- Bluetooth® interface for wireless speaker mic
- Easy to install by compact design
- Waterproof design (IP56)v

JHS-800S SPECIFICATIONS	
Standard	IMO resolution A.694 (17) (1991), IMO resolution A.803 (19) (1995), IMO resolution MSC.68 (68) (1997), IMO MSC / Circ.862 (1998), IEC 60945 Ed.4.0 (2002-08)
Display	5 inch TFT color LCD, 800 × 480 dots (WVGA), Brightness: 1000 cd/m2 (Typ.)
Communication modes	Simplex and semi-duplex press talk system
Transmission frequency	Simplex / semi-duplex : 155.000 - 163.500 MHz
Reception frequency	Simplex / semi-duplex : 155.000 - 163.500 MHz
Antenna output power	6 - 25 W (when reducing : 0.5 - 1 W)
Modulation method	FM / FSK
Type of emission	Radiotelephone communications : F3E / G3E, DSC / ATIS : F2B / G2B
Channel spacing	25 kHz
Frequency accuracy	±10 × 10-6 or less
Antenna impedance	50 Ω unbalanced
DSC CH70 recevier	Receiver : built in, Frequency : 156.525 MHz
Number of channels	ITU : Maximum 65 ch, USA : Maximum 65 ch, Canada : Maximum 65 ch, Inland waterway : Maximum 65 ch, Private : Maximum 200 ch, (channel steps : 25 kHz, 12.5 kHz, 10 KHz) Weather : Maximum 10 ch, Memory : Maximum 10 ch
Power supply voltage	24 VDC : 4.5 A
Power consumption (24 VDC input)	25 W when transmitting : Maximum 4.5 A / 108 W, When receiving : Maximum 1.5 A / 36 W
Interface	
Ports	IEC 61162 - 1 : 1 port, For GPS information input, IEC 61162 - 1/2 : 1 port, For AIS information input, brightness control and BAM communication. LAN (IEC 61162 - 450 compliant) : 1 port, For radar, ECDIS, RMS (VDR), GPS, AIS, DMC, brightness control, printer and BAM communication Voice line output (600 Ω, balanced) : 1 port, For VDR / S-VDR connection, Voice line output (600 Ω, unbalanced) : 1 port, For external speaker connection
Audio output	Built-in speaker (4 Ω) : 6 W or more, Handset (150 Ω) : 1 mW or more
NMEA0183 version	Ver1.5 / 2.0 / 2.3
NMEA0183 input sentence	ALR, GGA, GLL, GNS, RMC, VDM, VDO, ZDA
Environment	
Operating temperature	-25℃ to +55℃
Storage temperature	-40℃ to +80℃
Waterproofing	Marine VHF radiotelephone : IP56, Handset : IP66, VHF controller : IP56



MF/HF RADIO EQUIPMENT

JSS-2150/ 2250/2500

The JSS-2150 Class A MF/HF radio equipment features an intuitive user interface and advanced modular design that allows for a flexible installation approach in confined spaces.

KEY FEATURES

- All mode continuous full power operation available
- 3.8-inch high brightness display
- Class A 6CH DSC watch-keeping built in
- Flexible black box (JSS-2150) and rack mount (JSS-2250/2500) configuration
- Digital audio and integrated speaker
- Easy operation with JOG dial

150W
JSS-2150

250W
JSS-2250

500W
JSS-2500

Flexible installation

All MF/HF models are minimum configured as standard, consisting of a MF/HF controller+handset, transceiver and antenna tuner. The 150W model can be applied for non-solas vessels, but also configured with necessary options up to GMDSS A4 area.In contrast to the other two models, the 150W version has a smaller transceiver and antenna tuner which allows for a more flexible installation approach in confined spaces.

High power models

When more power output is required, simply select the 250W or 500W version. Additionally, the new 250W and 500W version come with a redesigned antenna tuner, transceiver and power supply designed to fit into an optional 19 inch rack: NCU-515A.

JSS-2150/2250/2500 SPECIFICATIONS			
Model	JSS-2150	JSS-2250	JSS-2500
IMO type approved		√	
Output power	150W	250W	500W
Regurations	IMO A.806(19), A.694(17), MSC68(68), MSC/Circ.862, IEC 60945 Ed.4 2002-08		
Transmission frequency	1605.0 ~ 27500.0kHz(100Hz steps)		
Reception frequency	90.0 ~ 29999.9kHz(100Hz steps)		
Frequency stability	Within ±10Hz		
DSC watch keeping frequency	2187.5kHz, 4207.5kHz, 6312.0kHz, 8414.5kHz, 12577.0kHz, 16804.5kHz		
Type of emission	J3E, F1B, A1A, H2B, J2D, H3E(receiving only)		
User programmable channel	Up to 400 (20 channels x 20 groups)		
ITU preset channel	1722ch		
Channel switching time	15sec or less		
Communication method	Push to talk (simplex, semi-duplex)		
Reception attenuation (ATT)	4 steps : 6dB, 12dB, 18dB, OFF		
Display	3.8 inch LED Backlit (320 by 240 pixels)		
Microphone input	-54dBm		
Audio output	Loud speaker : 5W(8Ω), Handset phone : 1mW(150Ω)		
Interface	IEC61162-1 (GPS/AME/RMS)		
Compass safe distance	2.0m		
Receiving system	Double superhetelodyne		
Sensitivity (SINAD 20dB)	J3E : ≤2.5μV, F1B : ≤0.7μV, A1A : ≤1.4μV		
RMS interface	Built in		
Transmitter output 1.6 - 4MHz	DC : 100Wpep	DC : 100Wpep, AC : 200Wpep	DC : 100Wpep, AC : 400Wpep
Transmitter output 4 -27.5MHz	DC : 150Wpep	DC : 150Wpep, AC : 250Wpep	DC : 150Wpep, AC : 500Wpep
Power DC	21.6 to 31.2V		
AC	option(90 to 132V, 180 to 264V)	90 to 132V, 180 to 264V	
Consumption	DC : TX ≤30A, RX ≤5A	DC : TX ≤40A, RX ≤6A AC : TX ≤2.0kVA, RX ≤0.5kVA	DC : TX ≤40A, RX ≤6A AC : TX ≤3.0kVA, RX ≤0.5kVA
Power saving	Relays are turned off when sleep mode		
Ambient condition	Operating temp : -15 to 55°C(controller), -25 to 55°C(antenna tuner) Storage temp : -15 to 55°C(controller), -25 to 70°C(antenna tuner) IP protection rate : IP22(controller), IP66(handset) Relative humidity : 0 to 93% non-condensing		

JMA-1030 SERIES

The JMA-1030 radar series is JRC's very first touch operated radar with new dome scanners that provide you with highly accurate target clarity and ease of mind of your surroundings during night or intense fog.

KEY FEATURES

- 7-inch wide VGA color touch display
- Proprietary System-on-Chip technology
- Simple and intuitive operation
- AIS and MARPA+ as standard
- Newly designed high performance scanners

JMA-1030 SPECIFICATIONS		
Model	JMA-1032	JMA-1034
Display type	Raster scan PPI	
Scanners	NKE-1066	NKE-2044
Antenna length	1.5 ft (450 mm radome)	2 ft (620 mm radome)
Output power	4 kW	4 kW
Transmitting frequency	9410 ±30MHz	
Beam width	Horizontal 5.2°, Vertical 25°	Horizontal 4°, Vertical 25°
Rotation speed	16, 20, 24, 27, 30, 36, 42, 48 rpm	
Pulse width	0.08μs/4000Hz, 0.08μs/2250Hz, 0.13μs/1700Hz, 0.25μs/1700Hz, 0.5μs/1200Hz, 0.8μs/750Hz	0.08μs/4000Hz, 0.08μs/2250Hz, 0.13μs/1700Hz, 0.25μs/1700Hz, 0.5μs/1200Hz, 0.8μs/750Hz, 1.0μs/650Hz
Range scale	0.0625, 0.125, 0.25, 0.5, 0.75, 1.5, 3, 6, 12, 24, 48*1 NM	
Adding range scale	1, 2, 4, 8, 16, and 32*1 NM	
Display	7-inch wide VGA (WVGA) color LCD touch display (800 by 480 pixels)	
Operation	Touch, buttons and push/rotary knob	
Presentation mode	RM: Head/North/Course-up, TM: North/Course-up	
Trail indication	15 sec to 15 min, 30 sec to 30 min, 1 min to 1 hr, 30 min to 24 hr, continuous	
Off center	Move to 4 pre-defined coordinates from the default center position	
Guard zone	Built in	
Alarms	8x scanner, 6x display, 16x receive data	
Tracking targets*2	10 built-in (automatic tracking), Tracking range up to 20 NM	
AIS targets*2	50 built-in (stores up to 500 ship static data)	
Input sentences	GGA, RMC, RMA, GNS, GLL, VTG, DPT, DBT, MTW, VDM, VDO, ALR, MWV, VWT, VWR, RMB, BWC, BWR (navigation) THS, HDT, HDG, HDM (bearing), VBW, VHW (speed)	
Output sentences	RSD, OSD, TTM, TLL, TTD, GGA, RMC, GNS, GLL, VTG, THS, HDT	
Output signals	External buzzer, external monitor (optional RGB unit NQA-2447 required)	
USB	Copy/restore internal settings, software update	
Languages	English, Spanish, Turkish, Russian, Japanese, Indonesian, Thai, Malaysian, Vietnamese, Chinese, Korean	
Power/Consumption	12-24V DC -10%+30%, Maximum 50W	
Ambient conditions	Operation temperature: -25 to 55°C (scanner), -15 to 55°C (display)Relative humidity: 0% to 93% non-condensingWaterproof/dustproof: IP26 (scanner), IP55 (display)*3	

*1 Only available on the JMA-1034
*2 Data from other equipment required
*3 Optional RGB unit does not meet IP55250mm141mm

7-inch display RoHS
NCD-2256 Weight 1.7 kg

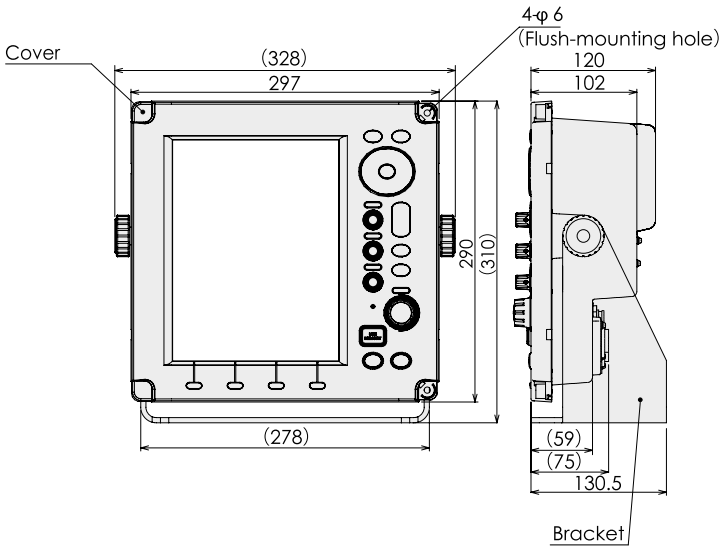
JMA-3300 SERIES

The JMA-3300 series features a 10.4-inch ultra bright LCD, and incorporates the latest digital signal processing for excellent target identification and detection in a compact design.

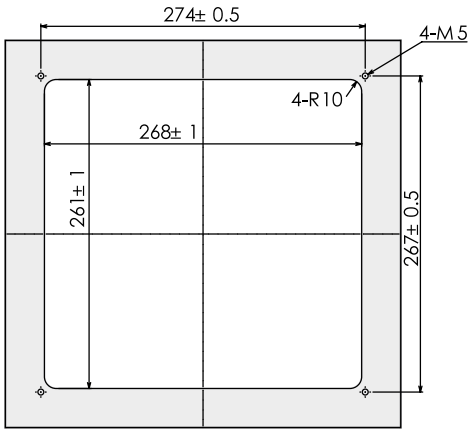
KEY FEATURES

- 10.4-inch ultra bright LCD
- New System-on-Chip technology
- Semi-Constaview digital signal processing
- AIS and MARPA+ as standard
- High speed version available

NCD-2182 Mass Approx. 5kg



Flush mounting hole



JMA-3300 SPECIFICATIONS			
Model	**JMA-3334**	**JMA-3336**	**JMA-3340-6**
Display	color raster scan PPI		
Scanners			
Model	NKE- 2043	NKE- 2063	NKE-2103-6
Transmitting frequency	X-band (9410MHz ±30MHz)		
Transmitting power	4kW	6kW	10kW
Scanner type	radome	open	
Antenna length	2ft	3.9ft	6ft
Rotation speed	16-48rpm	16-27rpm	16-27rpm
Beam width 3dB	H: 4°, V: 25°	H: 2°, V: 30°	H: 1.2°, V: 20°
Pulse width/repetition freq.	0.08μs / 4000Hz, 0.08μs / 2250Hz, 0.13μs / 1700Hz, 0.25μs / 1700Hz, 0.5μs / 1200Hz 0.8μs / 750Hz, 1.0μs / 650Hz	0.08μs / 4000Hz, 0.08μs / 2250Hz 0.13μs / 1700Hz, 0.25μs / 1700Hz 0.5μs / 1200Hz, 0.8μs / 750Hz 1.0μs / 650Hz	0.08μs / 2250Hz, 0.25μs / 1700Hz, 0.5μs / 1200Hz 0.8μs / 750Hz, 1.0μs / 650Hz
Maximum range	48NM	72NM	
Range scale	0.125, 0.25, 0.5, 0.75, 1.5, 3, 6, 12, 24, 48 NM	0.125, 0.25, 0.5, 0.75, 1.5, 3, 6, 12, 24, 48, 72 NM	
NCD-2182 Display unit			
Axial resolution	less than 30m		
Minimum detection range	less than 40m		
Azimuth resolution	less than ±1°		
Display	Glass bonded 10.4-inch LCD display (640 by 480 pixels) 1000cd/m² by white LED backlight		
Effective diamater	more than 150mm		
Presentation mode	RM: North / Head / Course-up TM: North / Course-up		
Gain	Auto / manual		
Trail indication	4 stages (example 1 minute to 1 hour or continuous)		
Off center	within 66% of PPI radius		
MARPA+ acquisition mode	Auto / manual		
MARPA+ targets	10 targets		
MARPA+ tracking	20NM		
MARPA+ info	To be selected from true heading, distance, COG, SOG, CPA, TCPA		
Vector mode and length	True/relative vector, adjustable from 1 to 60 minutes		
Guard zone	2 zones		
Alarms	CPA/TCPA, new target, lost, system error		
AIS targets (built-in)	50 targets		
AIS info	To be selected from MMSI, call sign, ship's name, COG, SOG, CPA, TCPA, heading, distance, longitude/latitude, status etc		
Input (navaid)	GGA, GNS, GLL, RMC, VTG, VBW, VHW, THS, HDT, HDG, HDM, DPT, DBT, MTW, ROT, RSA, VDM, VDO, ALR, VWT, VWR		
Input (heading)	IEC61162 (4800/38400bps - THS, HDT, HDG, HDM)		
	JRC-NSK format (JLR-20/30) Gyro-sync/step (360x, 180x, 90x, 36x)*1		
Input (speed)	IEC61162 (4800bps - VBW, VHW) Log-sync (360x, 180x, 90x, 30x)*1 Log-pulse (800, 400, 200, 100)*1		
Output	RSD, OSD, TTM, TLL, TTD, GGA, RMC, GNS, GLL, VTG, THS, HDT		
Contact out	1 for external buzzer		
Power supply	DC12/24V −10/+30%*2		DC24V −10/+30%
Power consumption	Approx. 60W	typ. Approx85W maximum wind: Approx180W	typ. Approx. 100W maximum wind: Approx. 360W
Ambient conditions	Temperature: -25° to 55°C (scanner) / -15° to 55°C (display unit), Relative humidity 0% to 93% non-condensing IP code: IP26 (scanner) / IP55 (display front panel)		

*1 Optional Gyro interface unit NCT-4106A required. *2Maximum cable length as 20m at DC12V operated

BLACK BOX RADAR

JMA-5200Mk2 SERIES

15" & 21" Displays available.

JRC/Alphatron Marine proudly presents the reintroduced JMA-5200MK2 radar series. This successful radar serie is now available as black box radar design. The JMA-5200Mk2 integrates the latest leading technologies with a set of advanced features to deliver continues high performance and are designed to seamlessly run radar images faster and more efficiently than ever before.

KEY FEATURES

- Black box design
- High-quality AlphaScreen monitor
- Constaview digital signal processing
- TEF multi-level target enhancement
- High speed version available
- Brushless antenna motors for extended lifetime
- Variety of X-band scanners available
- Latest technologies included
- Part of the ProLine package

Scanner Selection

A wide range of X-band scanners are available depending on installation space and required performance, all with exceptionally reliable target detection capabilities.

SPECIFICATIONS JMA-5200MK2 SERIES

IMO compliant	Non SOLAS							
Display	colour raster scan PPI							
Range scale								
Model	NKE-2043	NKE-2063A	NKE-2103-4	NKE-2103-6	NKE-2254-7	NKE-2254-9	NKE-2103-4HS	NKE-2103-6HS
Antenna Length	2ft	3.9ft	4ft	6ft	7ft	9ft	4ft	6ft
Transmitting Pwr.	4kW	6kW	10kW	10kW	25kW	25kW	10kW	10kW
Transmitting Freq.	9410 MHz ± 30 MHz							
Beam width 3 dB	Hor. 4°, Ver. 25°	Hor. 2°, Ver. 30°	Hor. 1,8°, Ver. 20°	Hor. 1,2°, Ver. 20°	Hor. 1°, Ver. 20°	Hor. 0,8°, Ver. 20°	Hor. 1,8°, Ver. 20°	Hor. 1,2°, Ver. 20°
Rotation Speed	16-48 rpm	16-27 rpm	27 rpm		24 rpm		48 rpm	
Pulse width (receive freq.)	0.08 µ s/4000 µ s 0.08 µ s/2250 µ s 0.13 µ s/1700 µ s 0.25 µ s/1700 µ s 0.5 µ s/1200 µ s 0.8 µ s/750 µ s 1.0 µ s/650 µ s		0.08 µ s/2250 µ s 0.25 µ s/1700 µ s 0.5 µ s/1200 µ s 0.8 µ s/750 µ s 1.0 µ s/650 µ s		0.07 µ s & 0.2 µ s/2250 µ s 0.4 µ s/1400 µ s 0.8 µ s/750 µ s 1.0 µ s/650 µ s 1.2 µ s/510 µ s		0.08 µ s/2250 µ s 0.25 µ s/1700 µ s 0.5 µ s/1200 µ s 0.8 µ s/750 µ s 1.0 µ s/650 µ s	
Duplexer	circular + diode limiter							
Tuning	automatic / manual							
Ambient Cond.	temperature -25 to 55°C, relative humidity 0 to 93% non-condensing							
Processor								
Model	NDC-1460							
Bearing indication	north-up / course-up / head-up							
Pres. Mode	RM display with true trail, RM display with relative trail, TM display							
EBL	2 (EBL1/EBL2) (center/independent) 000.0° - 359.9°, digital display							
VRM	2 (VRM1/VRM2), 0.000 - 97.7 NM, digital display							
Trail Indication	4 stages: short, middle, long, super long (e.g. short: off/0.25/0.5/1/3/6/10/15-min and continuous)							
Keyboard								
Model	NCE-7699A							
Conn. Cable	5 m (processor-keyboard)							
Install. Cable	CFQ-6912-20 standard L= 20 m (optional up to 65 m)							
Power Supply (V)	24 VDC (21.6 to 31.2 VDC) / 100 to 120/220 to 240 VAC (50/60 Hz, 1φ)1							
Power consumption at max wind load	60W	180W	600W		680W		600W	
Ambient Cond.	temperature -15 to +55 °C, relative humidity 0 to 93 % non-condensing (processor, display, keyboard)							

Processor RoHS

NDC-1460 Weight 4 kg (8.82 lbs)

125 mm (4.92 in)

300 mm (11.81 in)

Keyboard RoHS

NCE-7699A Weight 1.3 kg (2.87 lbs)

132 mm (5.20 in)

360 mm (14.17 in)

BLACK BOX RADAR

JMA-5300Mk2 SERIES

JRC/Alphatron Marine proudly presents the reintroduced 5300Mk2 radar series. Now fully adapted to the latest IMO rules and optionally available with a high-quality 19" display.

KEY FEATURES

- Black box design
- High-quality AlphaScreen
- Constaview digital signal processing
- TEF multi-level target enhancement
- High speed version available
- Brushless antenna motors for extended lifetime
- X-band and S-band
- IMO approved
- Part of the ProLine package

Scanner Selection

A wide range of X-band scanners are available depending on installation space and required performance, all with exceptionally reliable target detection capabilities.

JMA-5300Mk2 SPECIFICATIONS						
Model	JMA-5312-6	JMA-5312-6HS	JMA-5322-7	JMA-5322-9	JMA-5322-6HS	JMA-5332-12
IMO compliant	v	v	v	v	v	v
Display	colour raster scan PPI					
Range scale	0.125/0.25/0.5/0.75/1.5/3/6/12/24/48/96 NM					
Scanners						
Model	NKE-2103-6	NKE-2103-6HS	NKE-2254-7	NKE-2254-9	NKE-2254-6HS	NKE-1130
Antenna length	6ft.	6ft.	7ft.	9ft.	6ft.	12ft.
Transmitting power	10kW		25kW			30kW
Transmitting frequency	9410mHz ± 30mHz					3050mHz ± 20mHz
Beam width 3db	Hor.1.2°, Ver.20°	Hor.1.2°, Ver.20°	Hor.1.0°, Ver.20°	Hor.0.8°, Ver.20°	Hor.1.2°, Ver.20°	Hor.1.9°, Ver.25°
Rotation speed	27rpm	48rpm	24rpm		48rpm	24rpm (60/50Hz)
Pulse width (receive freq.)	0.08μs/2250Hz, 0.25μs/1700Hz, 0.5μs/1200Hz, 0.8μs/750Hz, 1.0μs/650Hz		0.07μs/2250Hz, 0.2μs/2250Hz, 0.3μs/1900Hz, 0.4μs/1400Hz, 0.8μs/750Hz, 1.0μs/650Hz, 1.2μs/510Hz			
Duplexer	circular + diode limiter					
Tuning	automatic / manual					
Ambient condition	temperature: -25°C +55°C, relative humidity: 93% @40°C					
Processor						
Model	NDC-1417					
Bearing indication	north-up / course-up / head-up					
Presentation mode	RM display with true trail, RM display with relative trail, TM display					
EBL	2 (EBL1/EBL2) (center/independent) 000.0° - 359.9°, digital display					
VRM	2 (VRM1/VRM2), 0.000 - 100.2nm, digital display					
Trail indication	4 stages: short, middle, long, super long (e.g. short: off/0.25/0.5/1/3/6/10/15-min and continuous)					
Display (optional on JMA-5300Mk2 series BB)						
Model	NWZ-173					
LCD	1280x1024dot (SXGA)					
Effective diameter	≥ 250mm					
Connection cable	5m (processor-monitor)					
Keyboard						
Model	NCE-5171					
Connection cable	5m (processor-keyboard)					
Installation cable	CFQ-6912-30 standard L= 30m (optional up to 65m)					CFQ-6912-20 (L=20m) 2695110056 (L=40m)
Power supply (voltage)	DC 21.6 - 31.2V					DC24V (DC21.6-31.2V) 1) AC100V to 240V
Power consumption (at max wind load)	620W		700W			240W + 1600VA
Ambient condition	temperature: -15°C +55°C, relative humidity: 93% @40°C (processor, display, keyboard)					

1) AC100-120/220-240V (50/60Hz, 1Ø). AC power is required for JMA-5332-12 antenna motor scanner.
All specifications are subject to change without notification.

BLACK BOX RADAR

JMR-5400

The new high performance JMR-5400 radar significantly improves short range detection and discrimination of targets presented on high brightness displays with intuitive icon-based operation. The system is running on the latest JRC-designed signal processing technology allowing radar images to effortlessly run faster and more efficiently than ever before.

KEY FEATURES

- Improved short range detection
- Black box design
- New and dedicated keyboard
- Advanced processing through ASIC
- Bright 19-inch display with 1000 candelas
- Supports C-MAP MAX and new pec charts
- Rainbow trails to improve visualization
- New 25kW X-band scanner
- High power bird detection scanner
- Proven Solid State S-band scanners

IN THE BOX

- Control unit
- Processor
- Keyboard
- Power cable
- Scanner
- Scanner cable

JMR-5400 SPECIFICATIONS - UPGRADING OUR PREVIOUS GENERATION		
Upgrade from model	JMA-5200(Mk11/Mk2)	JMA-5300(Mk11/Mk2)
Processor	Replace with NCD-1678	Replace with NCD-1678
Keyboard	Replace with NCE-5794	Replace with NCE-5794
Display	Replace with NWZ-208 or NWZ-214	Replace with NWZ-208
Scanner2	v	v
Cables	v	v
Power supply	v	v
Interswitch	v	v
Besides that it is also possible to transfer data that was used, such as marks, own and other ship's trails, destination, route and so on using our conversion software (please ask at the time of purchase). 1. First generation (Mk1) scanners are not compatible with JMR-5400. 2. NKE-2254-7/9/6HS not approved with JMR-5400. New 25kW scanners are available.		
Processor	NDC-1678 Weight 7.1 kg (15.65 lbs 2x DVI-D, 1x VGA (slave output as DVI-D). 4x IEC61162-1, 3x IEC61162-2. 2x LAN, 2x dry contact 2x operation, 3x contact. 2x JRC equipment GPS (compass). 1x power, 1x USB. 1x radar interface	
Keyboard	NCE-5794 Weight 2 kg (4.41 lbs Trackball operation, USB/SD slot, Dedicated user keys, Rotate and press buttons, System shutdown via keyboard, Backlight USB powered	

Processor RoHS

NDC-1678 Weight 7.1 kg (15.65 lbs)

- 2x DVI-D, 1x VGA (slave output as DVI-D)
- 4x IEC61162-1, 3x IEC61162-2
- 2x LAN, 2x dry contact
- 2x operation, 3x contact
- 2x JRC equipment GPS (compass)
- 1x power, 1x USB
- 1x radar interface

Keyboard RoHS

NCE-5794 Weight 2 kg (4.41 lbs)

- Trackball operation
- USB/SD slot
- Dedicated user keys
- Rotate and press buttons
- System shutdown via keyboard
- Backlight
- USB powered

BLACK BOX RADAR

ALPHATRON Marine | JRC

POWERED BY JRC
ALPHASCAN 5900

KEY FEATURES

The new AlphaScan 5900 radar can be connected with the AlphaScreen 19” and 26” proprietary displays. Both displays are completly new according the latest standards and are developed in line with minimalistic design approch. Available with a wide range of scanners, X-band, S-band, Solid State and High Speed.

A smart multi button found on the operating unit allows the operator to “turn and press” to access various functions such as zoom, display and brightness and track color. The function selected at that point is show at the top of the center on the display.

The Central Control Unit (CCU) can be used for your basic interfacing and configuration. A wide range of standard interfacing is direct available from this unit. The CCU includes two in-house designed Blizzard processors, bringing performance to a whole new level, especially for the complex tasks running flawlessly in the foreground and the background.

ALPHASCAN 5900 SPECIFICATIONS

DISPLAY

Size	Pixels	Resolution	Aspect ratio	IMO category	Vessel size
19-inch	M1280 by 1024	SXGA	5:4	CAT2 radar 250mm	300-9999GT
26-inch	1920 by 1200	WUXGA	16:10	CAT2 radar 250mm	300-9999GT

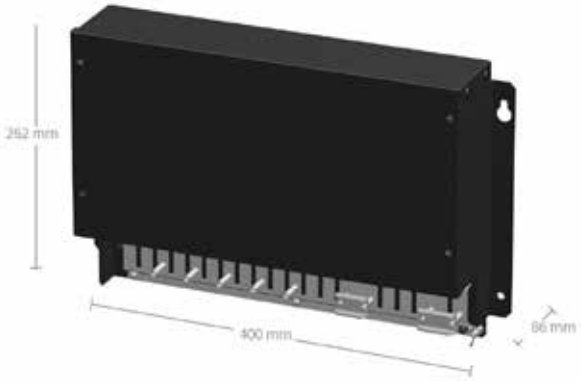
19-inch Display

26-inch Display

Trackball NCE-5605 Weight 1.3 kg

Central Control Unit (CCU) NDC-1590 Weight 5.6 kg

Junction box NQE-1143 Weight 3.8 kg



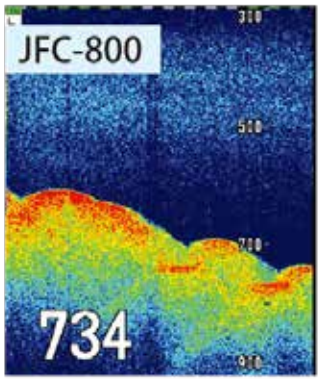
ECHO SOUNDER

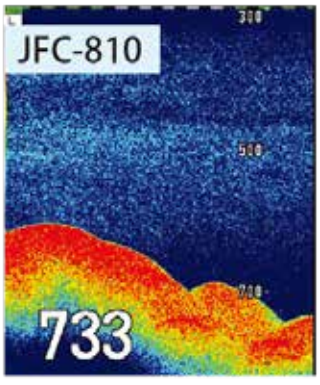
JFC-800E/810E

The JFC-800/810 all-in-one echo sounder utilizes a rugged 10.4-inch bonded and sunlight viewable display, offering advanced filtering capabilities using digital signal processing technology to ultimately provide a clear image and allow for deeper sounding at higher frequencies.

KEY FEATURES

- Advanced digital signal processing
- 10.4-inch sunlight viewable display
- Two models; standard and high sensitivity
- Multi-language; English, Chinese, Korean, Thai, etc.
- Store and recall favorite fishing hotspots
- Combination of zoom ranges
- Auto function; gain, shift and range





Transducer	JFC-800	JFC-810
Frequency	50/200 kHz	50/200 kHz
Output power	1kW	1kW
Material	Rubber	Urethane
Cable Length	10m	15m

JFC-800E/810E SPECIFICATIONS		
Model	JFC-800	JFC-810
Transducer	Standard	High Sensivity
Outp ut power (RMS)	1kW	
Output frequency	50kHz and 200kHz	
Output method	Single or Alternate	
Display size and type	10.4 inch color TFT LCD	
Display resolution	640 × 480 pixels (VGA)	
Basic range	2.5 to 2000 (m), 10 to 6000 (ft), 2.5 to 1100 (fm / l.fm) (8 ranges can be set to users choice)	
Zoom range	2.5 to 200 (m), 10 to 650 (ft), 2.5 to 150 (fm / l.fm)	
Range unit	m, ft, fm, l.fm	
Shift step	1m□10m□1/8□1/4	
Presentation modes	High frequency, Low frequency, Dual frequency, Zoom image (Bottom lock, Bottom discrimination, Bottom zoom, Zoom,Bottom follow zoom), Nav mode, Vertical split, Horizontal split,A-scope can be displayed at all above modes	
Presentation colors	64 colors, 16 colors, 8 colors, Monochrome	
Back ground colors	Marine blue, Blue, Black, White, Nighttime color, Other 5 colors	
Alarms	Bottom, Fish, Temperature*1, Speed*2, Arrival*3, XTE*3	
Image speed	9 steps & stop	
Functionst	Interference rejection, Color rejection, VRM, Noise rejection, White line, Draft correct, Water temperature correct, Boat speed correct,Store image (10 images), Sona-Tone, Fishing Hot Spot, Event memory, Simple plotter, Panel illumination, Power reduction, External trigger, Fish information, Detection area display	
Language	Chinese, English, French, Greek, Italian, Japanese, Korean, Spanish, Thai	
Input data format and sentences	NMEA0183 Ver.1.5/2.0/3.0 GGA, GLL, HDT, MTW, MWV, RMC, VHW, VTG, ZDA	
Output data format and sentences	NMEA0183 Ver.2.0 (DBT : Ver.1.5) DBT, DPT, GGA, GLL, HDT, MTW, MWV, RMC, TLL, VHW, VTG, ZDA	
NMEA input / output port(s)	1	
Power supply	10.8 to 31.2VDC	
Power consumption	30W or less (24VDC)	
Ambient conditions	Operating temperature :-15 to +55□Water protection:IPX5	

*1 : Water temperature sensor, or enter the external water temperature data is required (JFC-810 has a built-in water temperature sensor)

*2 : Requires speed data from Speed sensor or GPS sensor

*3 : Requires data from GPS sensor

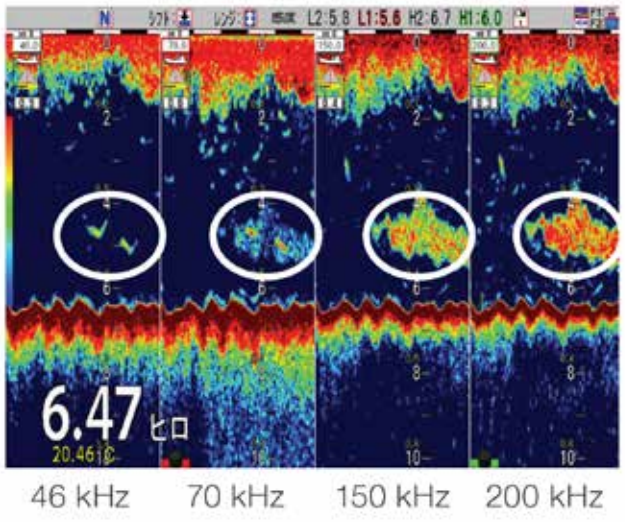
Display Unit JFC-800/810 Weight : 7.5kg

Transducer TD-501C
Weight : 2.9kg

Transducer TDM-031D
Weight : 3.5kg

ECHO SOUNDER

JFC-180BB



The JFC-180 is an innovative, blackbox echo sounder which is capable of displaying 4 different frequencies at the same time, providing the operator greatly enhanced fish detection. It is easier to differentiate between the various fish species, large shoals of fish and the seabed, resulting in better targeted catches and contributing to conservation of fish stocks.

KEY FEATURES

- Advanced 3 kW transducer
- Black box design
- Dedicated keyboard
- XGA display resolution output
- Flexible interfacing
- Digital signal processing technology
- Simultaneous display of four frequencies
- One touch memory buttons
- Long range detection
- Energy saving mode

OPTIONS

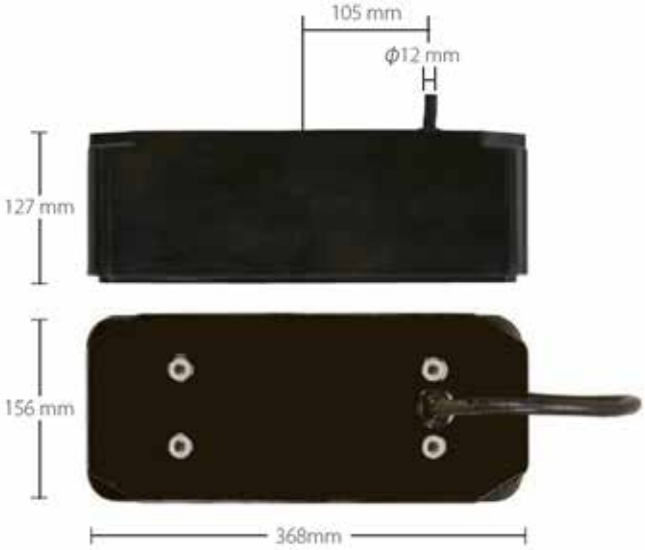
TDM52A

TRANSDUCER JFC180
38-75KHZ/130-210KHZ 3KW

JFC-180BB SPECIFICATIONS	
Model	JFC-180BB
Processor unit	NCM-1810E
Operation unit	NCH-1800E
Transducer (Output frequency)	TDM-052A (38 to 75kHz and 130 to 210kHz) TDM-062A (38 to 75kHz and 85 to 135kHz)
Selectable frequency range	24 to 240kHz 0.1kHz step
Output method	Simultaneous/Alternate
Display type	Owner supply (XGA compatible output through RGB connector)
Display ranges	1 to 3000m, 1 to 2000l.fm (8 ranges can be set to users choice)
Zoom ranges	1 to 260m, 1 to 180l.fm
Range units	m, ft, fm, l.fm
Presentation modes	High frequency, Low frequency, 1 to 4 frequency, Zoom image (Bottom lock, Bottom discrimination, Bottom zoom, Zoom, Bottom follow zoom), Nav mode, Vertical split, Horizontal split, Mix A-scope can be displayed at all above modes
Presentation colors	64 colors, 16 colors, 8 colors, Monochrome
Back ground colors	Marine blue, Blue,Dark blue, Black, White, Nighttime color, Other 4 colors
Alarms	Bottom, Fish, Temperature×2, Speed×3, Arrival×4, XTE×4
Image speed	9 steps & stop
Functions	Interference rejection, Color rejection, VRM, Noise reduction, White line, Water temperature correct, Boat speed correct, Store image (500 images), Sona-Tone, Fishing Hot Spot, Event memory, Simple plotter, Panel illumination, Power reduction, External trigger, Detection area display, CM key, Water Temp. graph, Individual range operation, External memory storage (SD card, USB memory), Heaving compensation Auto functions Range, Shift, TVG, TX Power, White line
Languages	Japanese, Chinese, English, French, Greek, Italian, Korean, Spanish, Thai
Input data formats and sentences	NMEA0183 Ver.1.5/2.0/3.0 GGA, GLL, HDT, MTW, MWV, RMC, VHW, VTG, ZDA
Output data formats and sentences	NMEA 0183 Ver.2.0 (DBT : Ver.1.5) DBT, DPT, GGA, GLL, HDT, MTW, MWV, RMC, TLL, VHW, VTG, ZDA
NMEA ports	2
Power supply	21.6 to 31.2VDC
Power consumption	50W or less (24VDC)
Environmental	Operating temperature: −15 to ×55×

Processor NCM-1810E Weight : 5.6kg

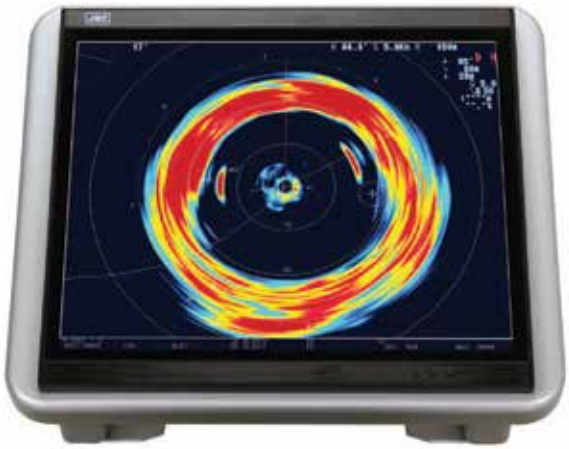
Keyboard NCH-1800E Weight : 0.7kg



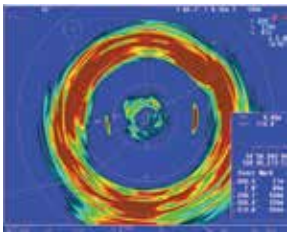
Transducer TDM-052A Weight :11kg
Transducer TDM-062A Weight :11.4kg

OMNIDIRECTIONAL SONAR

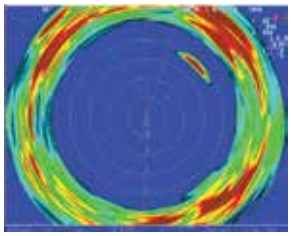
JFS-280



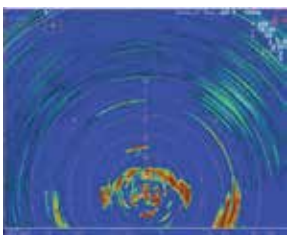
Set the motion to head up or north up (sensors required) and you can show the sonar image as normal, full, split screen or off center mode, which is approx. 1.5x the normal range.



Normal View



Full screen



Off centre

The JFS-280 is a compact and fully stabilized omni-directional sonar, incorporating a robust transducer consisting of 512 elements. With the medium frequency of 62 KHz, the sonar provides an excellent and clear image, displaying schools of fish with astonishing discrimination, in shallow waters as well as in deep waters

KEY FEATURES

- Stabilized transducer
- Quick variable beam angle
- High power and long pulse
- Narrow angle beam
- SXGA pixel resolution (1280 x 1024 px)
- Easy to use keyboard
- Stainless steel dome transducer
- Auto retractable hull unit
- Outside breaker switch
- Complete system 24V DC powered

ACCESSORIES

- 19-inch display
- Desktop frame for NWZ-207
- Keyboard
- Speaker
- Gyro interface
- Tank
- AC/DC power supply
- Extension cable 50m
- Extension cable 70m

JFS-280 SPECIFICATIONS	
Model	JFS-280
Display	NWZ-207 Weight 6 kg (13.22 lbs). 1280-by-1024-pixel resolution. 2000:1 contrast ratio (typical). 500 cd/m2 max brightness. View angle (H/V) 178. 5:4 aspect ratio. VGA in, DVI-D in Power input 21.6 to 31.2V DC (3A)
Keyboard	NCH-578 Weight 1.3 kg (2.87 lbs). Rotate/push and trackball operation. Dedicated (user defined) buttons. Direction, hoist and title functions. JRC original design. Flush mount installation available. (Forced) power button. Powered via processor
Processor	NJC-31 Weight 11 kg (24.25 lbs). Digital signal processor. 800 Hz/2W audio output. Display motion: head up/north up. Display mode full screen/off center. 16 preset ranges. Sonar range scale 100 to 2000m. Power input 21.6 to 31.2V DC (3A)
Transceiver	NTB-23 Weight 34 kg (74.96 lbs) Straight amplifier. Full digital beam method. Average system consumption 0.5 kW. Pulse width 0.4 to 36ms. Tilt angle -5° to 60°. RCG, AGC, TVG supported. Power input 21.6 to 31.2V DC (13A)
Hoisting unit/transducer	NKF-2800/CHG-2800 Weight 110 kg (242.51 lbs) Omni-directional transmission (62kHz). Max consumption currency 30 A (when hoisting) Hoisting 600mm/interval under 20 sec. Max speed 18 knots when hoisting Power input 21.6 to 31.2V DC (5A). Max consumption when hoisting: 30A
Speaker (option)	6USFD00010 Weight 400 g (0.88 lbs) Standard table mount bracket. Flush mount installation possible. JRC original design Temperature -25 to 55°C. Rated input power 2W. Maximum input power 6W. Impedance 4Ω

Display (option) RoHS

NWZ-207 Weight 6 kg (13.22 lbs)

382 mm
(15.04 in)

429 mm
(16.89 in)

75 mm
(2.95 in)

Processor RoHS

NJC-31 Weight 11 kg (24.25 lbs)

460 mm
(18.11 in)

370 mm
(14.57 in)

265 mm
(10.43 in)

Keyboard RoHS

NCH-578 Weight 1.3 kg (2.87 lbs)

132 mm
(5.20 in)

360 mm
(14.17 in)

59 mm
(2.32 in)

Transceiver RoHS

NTB-23 Weight 34 kg (74.96 lbs)

487 mm
(19.17 in)

453 mm
(17.83 in)

374 mm
(14.72 in)

Hoisting unit/transducer RoHS

NKF-2800/CHG-2800 Weight 110 kg (242.51 lbs)

1625 mm
(63.98 in)

SEARCHLIGHT SONAR

JFP-185BB

The JFP-185 searchlight sonar uses a wide band transducer. The most suitable output frequency in a band from 130 to 210 kHz can be selected in 0.1 kHz steps, depending on the fishing method and the target species in various depths. The flexible selection of frequencies also enables the fishing vessel to operate at a different frequency than those of surrounding vessels.

KEY FEATURES

- Black box design
- Multiple display modes
- Space saving hoist unit
- Easy operation
- Data transfer by USB
- Enhanced presentation modes
- Selectable frequencies
- Advanced keyboard
- Remarkable scanning speed
- Primary/secondary display (VGA output)

ACCESSORIES

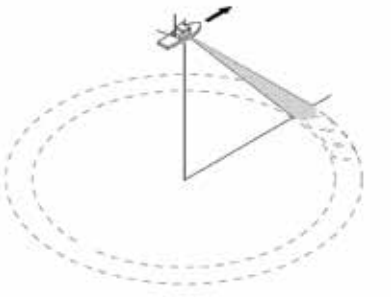
- Remote control
- Tanks (PVC, FRP)
- Shaft guide (FRP)
- Power supply
- Junction box
- Display

JFP-185BB SPECIFICATIONS AND MODEL INFORMATION	
Model	JFP-185
Output power	1.5 kW
Out frequency	130 to 210 kHz (0.1 kHz steps)
Tilt angle	-90° to 5° (1° steps)
Beam angle	8° to 12°
Display output	VGA (640 by 480 pixels)
NMEA ports	1 input/output
Power supply	10.8 to 31.2V DC
Power consumption	70W or less

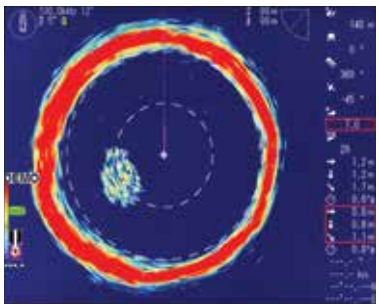
VARIOUS DISPLAY MODES

The sonar integrates multiple display modes, facilitating a valuable working environment by illuminating the underwater scene with a beam of sonic energy rotating through 360 degrees. The JFP-185 provides a range of display modes to suit the search task.

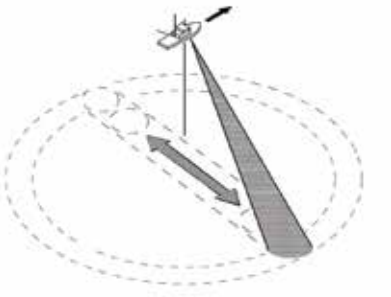
Sonar



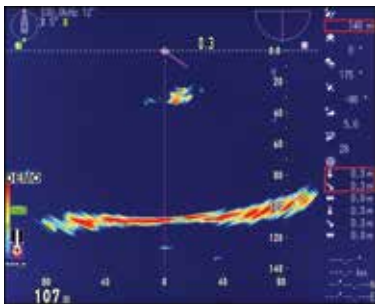
Searching around the vessel



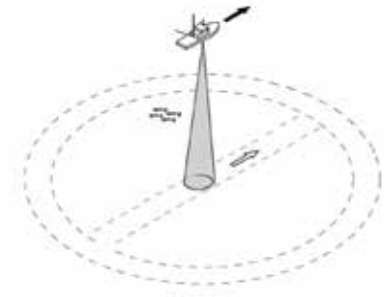
Bottom scan



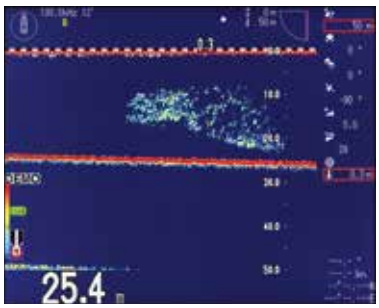
Reflected echo from seabed



Echo sounder



Displaying image as fishfinder



BLACK BOX CONFIGURATION

The searchlight sonar consists of a compact processor, dedicated keyboard and high performance transducer, allowing for a flexible installation approach in confined spaces. You can choose your own display, as long as it supports VGA.

OPTIMUM TILTING

The center of the beam can be set in 1-degree increments from 5 degrees from the horizontal, to 90 degrees from the sea surface. The transducers ultra sonic beam sweeps a specific sector and bearing. When pointing straight down, the beam will give a high definition picture of the sea floor. As the beam moves from the perpendicular to the horizontal, bottom definition reduces and fish detection improves.

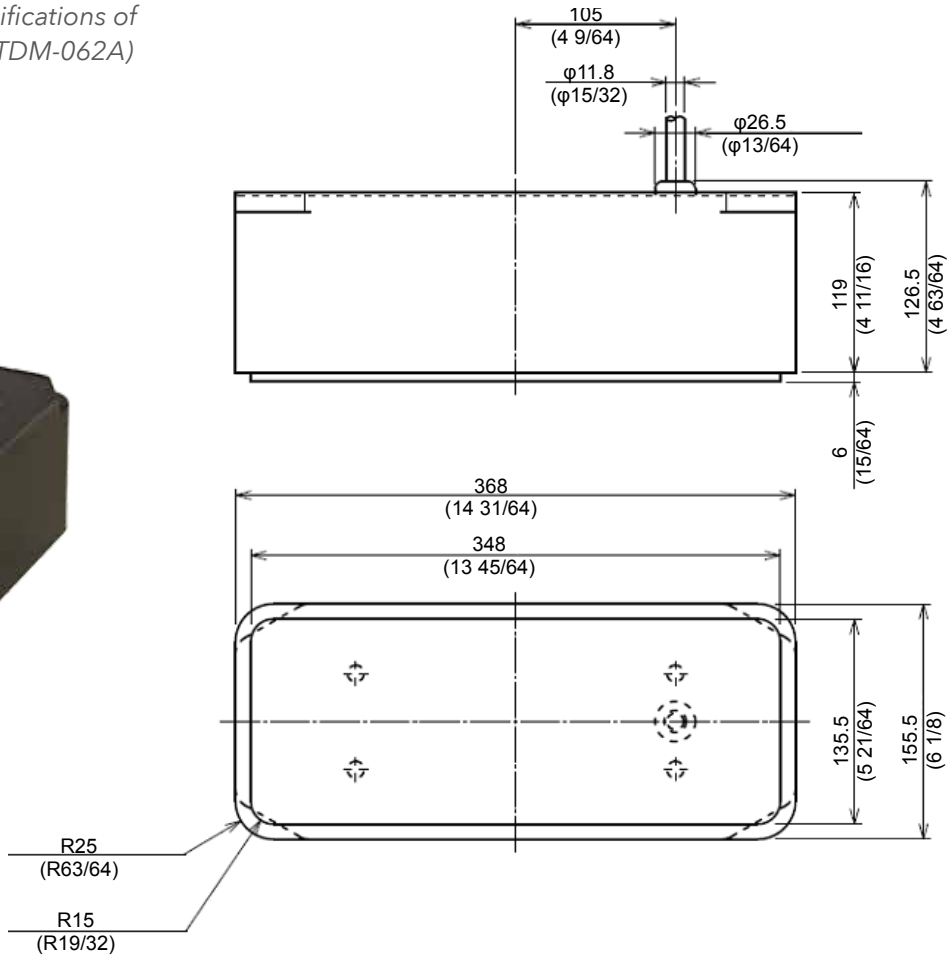
TRANSDUCER OPTIONS

TRANSDUCERS

JFC-180BB TRANSDUCER

Cable length 15m (590 35/64)	
Weight	TDM-052A: 11.0 kg (24.5 lb)
	TDM-062A: 11.4 kg (25.2 lb)
Material:	Polyurethane mold

Outline dimensions and specifications of transducers (TDM-052A and TDM-062A)

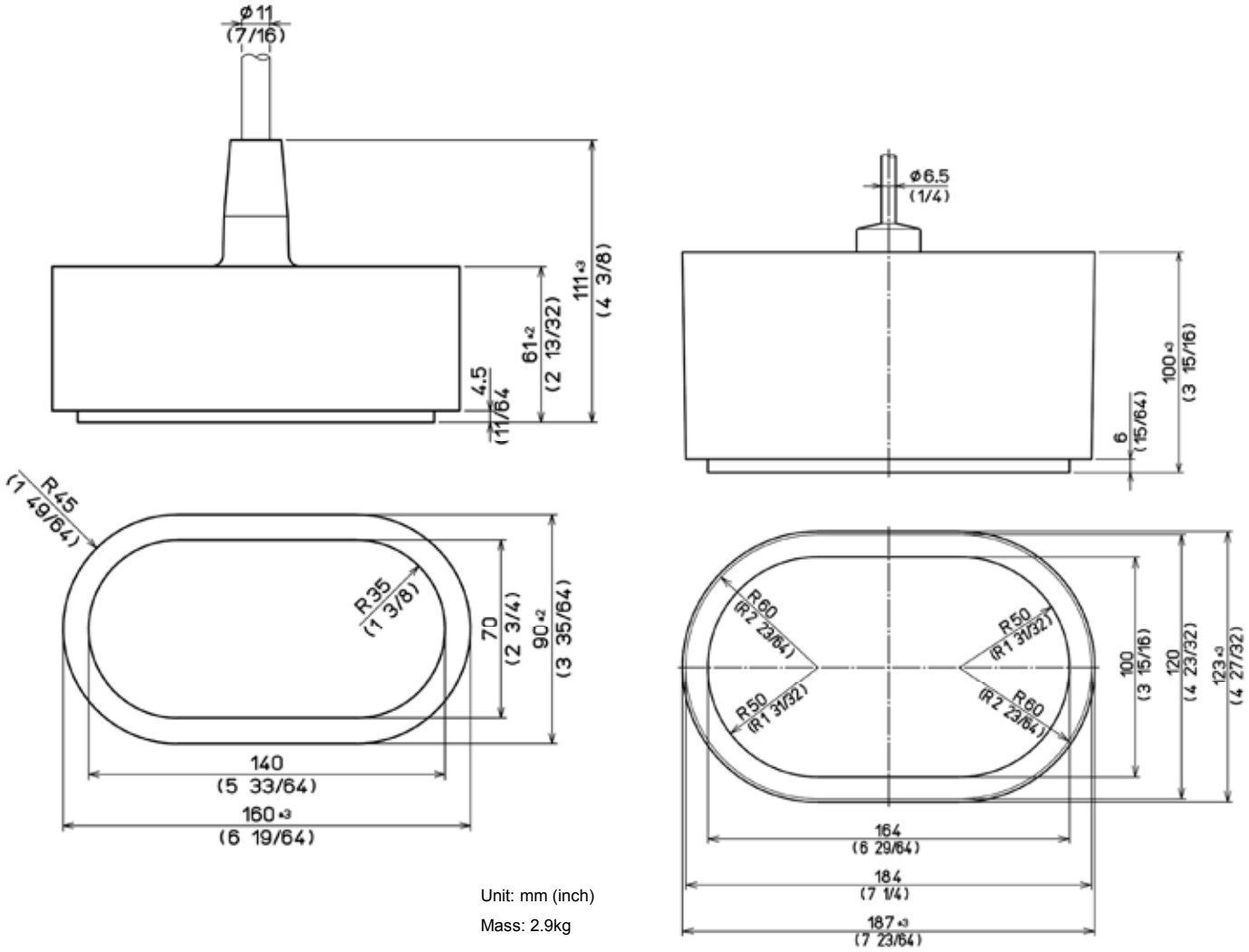


Unit: mm (inch)

JFC-800/810 TRANSDUCER

Cable length 15m (590 35/64)

Weight	TDM-031D / 3.9kg (8.6lb)
Material:	Polyurethane



Unit: mm (inch)

Mass: 2.9kg

JHS-183

The JHS-183 is an important piece of navigation equipment for collision avoidance and maneuvering, featuring an all new display and a transponder designed for long range reception.

KEY FEATURES

- 4.5-inch high brightness display
- Dual color LED backlight
- Displaying up to 200 AIS targets
- Proven transponder design
- Advanced interfacing possible

AIS Controller
NCM-983 Mass 2.1kg

JHS-183 SPECIFICATIONS	
IMO type approved	V
Frequency	156.025-162.025 MHz, default channels 161.975 MHz, 162.025 MHz, DSC (receive only): 156.525 MHz
Frequency accuracy	Within ±3 × 10-6
Channel spacing	25 kHz
Type of emission	AIS: G1D (F1D)
Type of modulation	AIS: GMSK
Power	19-35V DC (optional AC/DC power supply unit 100-220V AC)
Consumption	Up to 3.0A (transmitting), up to 1.0A (receiving)
Output power	12.5W/1W
Display	New 4.5-inch FSTN LCD (128 by 64 pixels)
Keyboard	12 (backlit) keys
Dimmer	4 levels
Interfacing (standard)	IEC61162-1/2 input: 2 ports (GPS, gyro)
	IEC61162-2 in/output: 1 port (radar or ecdis)
Interfacing (with connection box)	IEC61162-1/2 input: 3 ports (GPS, gyro, speed log)
	IEC61162-1/ITU-R M, 823-2: 1 port (DGPS)
	IEC61162-2 in/output: 3 ports (radar, ecdis, long range)
	IEC61993-2 alarm output: 1 port
IEC61162-1 input	GNS, GLL, DTM, GBS, VBW, RMC, HDT, ROT, GGA, VTG
IEC61162-2 input	ABM, ACA, ACK, AIR, BBM, LRI, LRF, VSD, SSD, EPV, HBT, VDS, AIQ
IEC61162-2 output	ABK, ACA, ALR, DSC, DSR, LRF, LR1, LR2, LR3, TXT, VDO, VDM, TRL, VER, NAK
LAN (New)	IEC 61162-450: 1 port (for maintenance and ship's network)
Pilot plug	IEC61162-2 in/output: 1 port
Pilot plug input	ABM, ACA, ACK, AIR, BBM, EPV, SPW, HBT, SSD, VSD, AIQ
Pilot plug output	ABK, ACA, ACS, ALR, TRL, TXT, SSD, VSD, VDM, VDO, VER, NAK, DSC, DSR
Transponder connection	Single coax cable (up to 50 m) from display to transponder
Ambient conditions	Operating temperature: -25 to 55°C (AIS Transponder) -15 to 55°C (AIS Controller, Connection box) IP protection rate: IP56 (AIS Transponder), IP55 (AIS Controller) Relative humidity: 0 to 95% non-condensing

AIS Transponder
NTE-183 Mass 2.6kg

NAVTEX RECEIVER

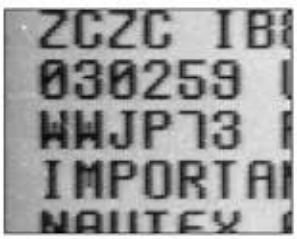
NCR-333

The high-performance NCR-333 navtex integrates a high visibility LCD display, shares the same simple configuration as its predecessor and contributes to improved safety at sea.

KEY FEATURES

- 5.7 inch Wide LCD Screen
- Automatic Tune Function by GPS
- Full meet latest IMO
- 3 receiving frequencies
- Printerless type
- Easy Installation
- Easy operation
- External Printer (Option)
- Navtex data export function for Integrated Navigation System (ECDIS or etc.)

Three different character sizes of display can be selected at your convenience for comfortable visibility.

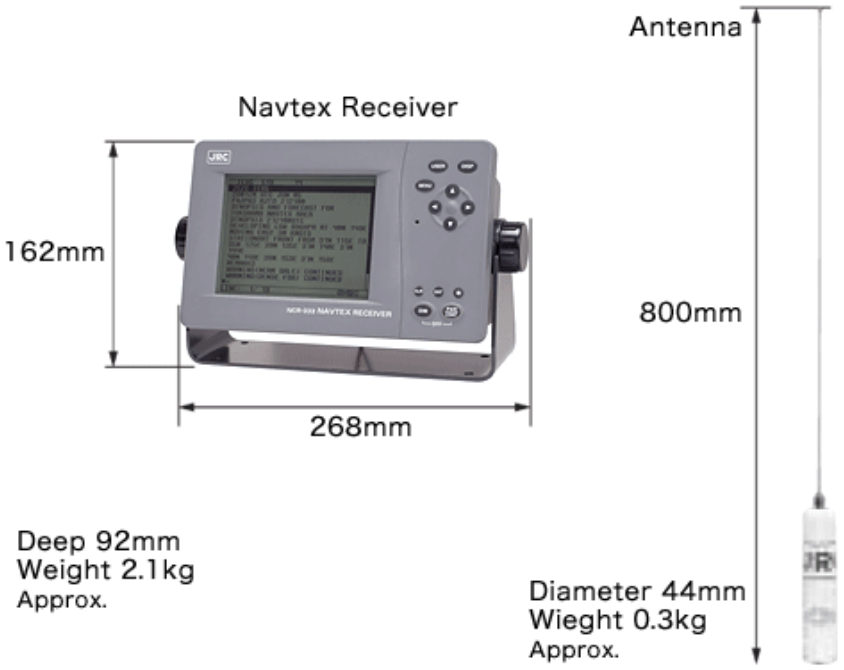


Normal

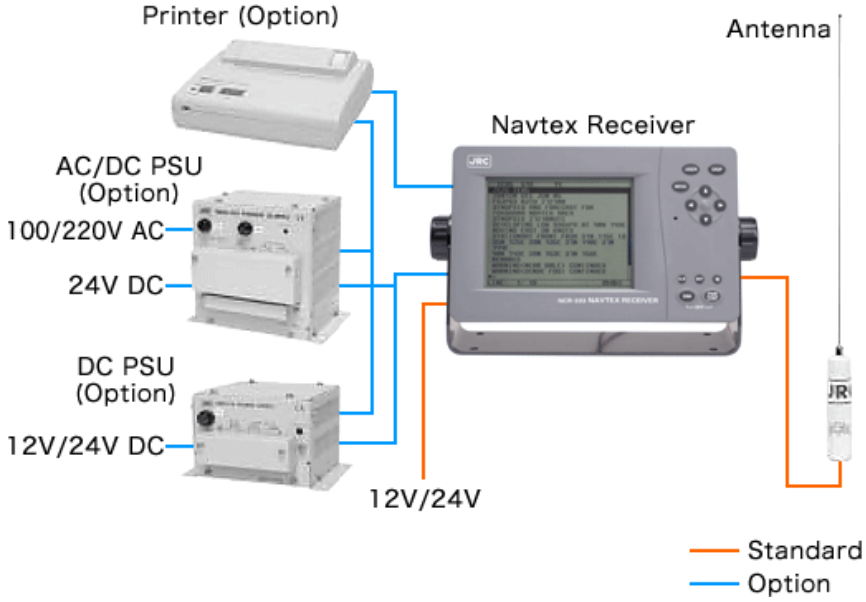
Medium

Large

NCR-333 SPECIFICATIONS	
Receiving frequency	490kHz, 518kHz, 4209.5kHz
Receiving mode	F1B NAVTEX broadcast
Sensitivity	CER better than 1x10-2 at 1uV input to 50Ω antenna
Frequency stability	+/-15Hz
Display	5.7-inch Black & White LCD
Received message storage function	Each Channels : 200 messages Storage length : 70hours
Interface for external units	Serial Interface : 2ports (For Printer and Integrated Navigation System)
Power supply	12V - 24V DC



Schematic Diagram



MULTI FUNCTION DISPLAY

MFD
Radar | ECDIS | Conning | BAM

Following many decades of navigation experience and with a wealth of feedback from vessel owners, navigation officers and training institutions around the world, JRC introduces the latest, all-new Multi Function Display (MFD).

Underneath the beautifully designed units, the MFD is packed with powerful components that give you smooth graphics, fast processing and all-round serious performance.

KEY FEATURES

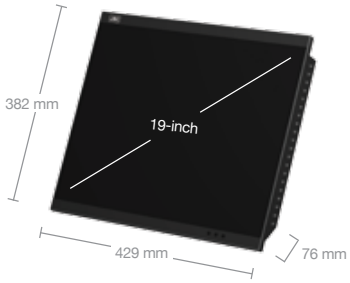
- MFD can be connected to JRC's 19-inch and 26-inch proprietary displays
- Smart multi button found on the operating unit allows the operator to "turn and press" to access various functions such as zoom, display and brightness and track color
- Unique jGUI interface and modular design
- CCU includes two in-house designed Blizzard™ processors
- Suits a range of Radar types
- New ECDIS model comes standard with a pre-loaded range of official, global ENC's and is ready for all well known chart suppliers

SPECIFICATIONS	
Model	Multi Function Display
Central Control Unit	The processor called the Central Control Unit (CCU), the power supply unit and the junction box are designed with common form factors, so installation is made easy, both as a black box solution or in a standalone unit CCU includes two in-house designed Blizzard™ processors, bringing operational performance to a whole new level, especially for the complex tasks running flawlessly in the foreground and the background
Displays	MFD can be connected to JRC's 19-inch and 26-inch proprietary displays. The 19-inch and 26-inch are available as standard LCD or as bonded version.
Control	Trackball and full size QWERTY keyboard
Junction Box	Radar Interface (RIF) to connect a radar scanner Gyro Interface (GIF) in case of step/synchro signal Serial to LAN convertor (SLC) to extend your in/outs Analog board (AOB) for analog signal inputs Even the PCBs fitted are thought through. The junction box can hold up to 9 different variations. It can physically hold 2 SLC's. The GIF and RIF are both half the size of the SLC. The AOB is fitted on top of an SLC. On page 31 you can find which interfaces are available at each PCB.
Radar	Suits a range of radar types including X-band and S-band
ECDIS	Ex-factory the new ECDIS model comes standard with a pre-loaded range of official, global ENC's and is ready for all well known chart suppliers. S57 Ed.3.0/3.1 S-63 C-Map Ed.3.0 Professional(+) C-Map ENC Jeppesen PRIMAR ECDIS service ARCS
Conning	Minimum requirement for conning is a trackball and a Central Control Unit (CCU). Extensive display of information Three dedicated operational tabs Graphical or numerical sensor data Switch between H-up and N-up Data source and data unit selection Alert management information
Notification Function	The alert notifications has been deeply integrated into the MFD design architecture having become an integral part for the officer. Alerts are prioritized as "red" alarm, "orange" warning and "yellow" caution.
Wave Analyser	Available via additional licence. The wave analyzer is able to assess wave direction, length, speed and height to essentially use it as a decision support system, delivering true benefit to officers. The X-band scanner unit detect sea clutter from the sea surface and the incredible performance of the Blizzard™ platform processes and analyzes wave action, which is displayed on screen.
Route Planning	The advanced nature of JRC's new ECDIS system allows you to plan a route in different ways with extensive flexibility Split the chart between single, left-right, top-bottom or as floating view which can be scaled at own convenience.
INS Connectivity	MFD can be part of an Integrated Navigation System (INS) and approved as such that holds (chart) radar, ECDIS, conning and BAM functionality. With these functions combined, achieved through full integration with onboard sensors, it allows centralized monitoring by a bridge network, navigation monitoring for prevention of collision and grounding. Also highly accurate navigation control functions as Track Control System (TCS) provide safe navigation and effective bridge management.

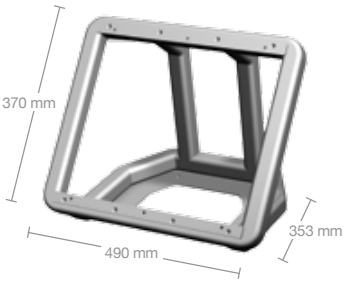
MULTI FUNCTION DISPLAY

MFD
Radar | ECDIS | Conning | BAM

19-inch display RoHS
NWZ-207 Weight 6 kg

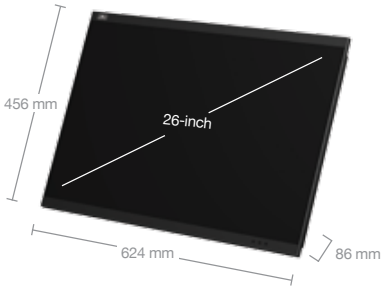


Desktop frame 19-inch RoHS
CWB-1594 Weight 3.6 kg

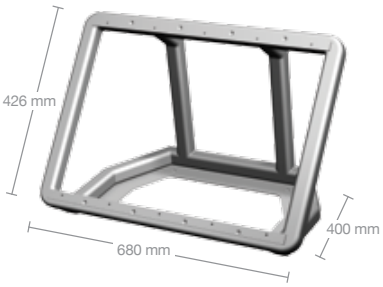


1280-by-1024-pixel resolution
2000:1 contrast ratio (typical)
500 cd/m2 max brightness
View angle (H/V) 178°C
5:4 aspect ratio
DVI-D in, VGA in, USB
Power 21.6 to 31.2V DC

26-inch display RoHS
NWZ-208 Weight 16 kg

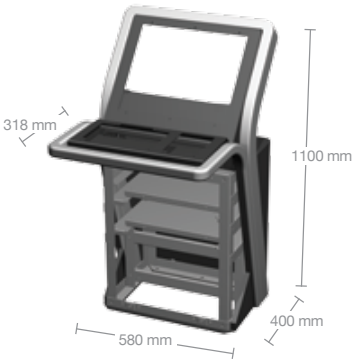


Desktop frame 26-inch RoHS
CWB-1595 Weight 5.5 kg



1920-by-1200-pixel resolution
1500:1 contrast ratio (typical)
400 cd/m2 max brightness
View angle (H/V) 176°C
16:10 aspect ratio
DVI-D in, VGA in/out, USB
Power 21.6 to 31.2V DC or
Power 85 to 265V AC

Cradle frame 19-inch RoHS
CWA-245 Weight 47 kg



Cradle frame 26-inch RoHS
CWA-246 Weight 57 kg

Fits JRC 19- or 26-inch display
Fits trackball + keyboard or tray
Fits central control unit (CCU)
Fits power supply unit (PSU)
Fits Junction box + PCB's
Fits UPS (DIN rail mounting)
Fits necessary cables

MFD SPECIFICATIONS

Trackball RoHS

NCE-5605 Weight 1.3 kg

2-inch trackball
2 buttons click (left and right)
USB and speaker
Vibration of alert and warning
Multi function button
Cable up to 5 m (option 30 m)
System ON/OFF button

Keyboard RoHS

NCE-5625 Weight 800 g

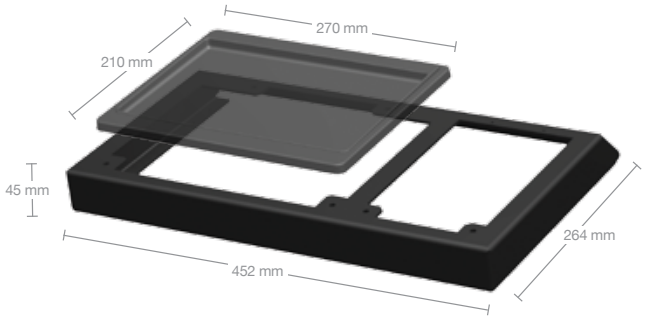
QWERTY keyboard layout
Pitch 15 mm/stroke 2 mm
Dedicated keys (HOME, TX/STBY, PI, DISP OFF, AZ, PANEL, DAY/NIGHT, MOB, USER1, USER2)
Rotate and press (EBL, VRM, SEA, RAIN, GAIN)

Operation desktop frame RoHS

CWB-1596 Weight 1 kg

Tray RoHS

CWB-1593 Weight 300 g



Fits keyboard or tray
Fits trackball

MULTI FUNCTION DISPLAY

MFD
Radar | ECDIS | Conning | BAM

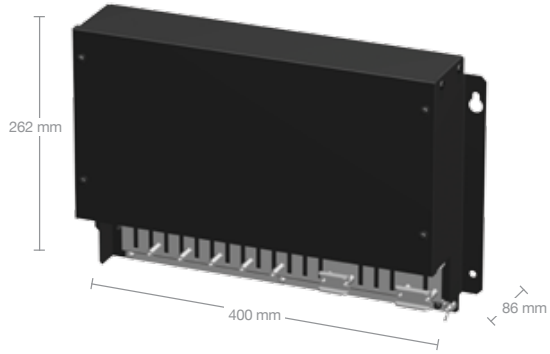
Central Control Unit (CCU) RoHS
NDC-1590 Weight 5.6 kg

1x DVI-D, 1x VGA
2x IEC61162-1, 2x IEC61162-2
3x LAN, 2x dry contact,
1x trackball, 1x serial operation
1x power, 3x USB
1x RIF, 1x DVD drive
1x ground

Power Supply Unit (PSU) RoHS
NBD-913 Weight 4.2 kg

AC input 85 to 264V AC
DC input 21.6 to 31.2V DC
Over voltage protection
DC output 12V, 2A (standby)
DC output 24V, 4A (CCU)
DC output 24V, 6A (display)
DC output 48V, 4A (scanner)

Junction box RoHS
NQE-1143 Weight 3.8 kg



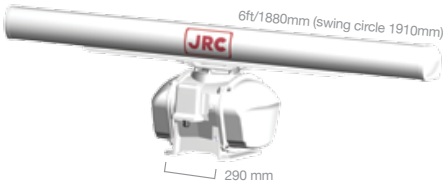
Power 21.6 to 31.2V DC
Power consumption 48VA (max)
Current protection 3Ax2 15Ax1
Reverse polarity protection
Temperature: -15° to 55°C
Protection rate: IP20
Humidity: ≤93% noncondensing

MFD SPECIFICATIONS

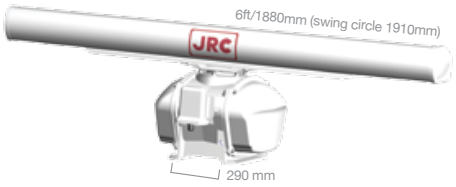
10kW X-band RoHS
NKE-2103-6 Weight 40 kg

10kW X-band high speed RoHS
NKE-2103-6HS Weight 40 kg

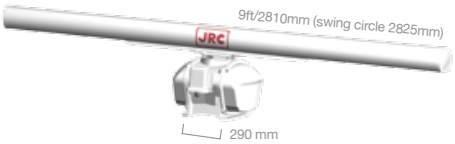
25kW X-band high speed RoHS
NKE-2254-6HS Weight 55 kg



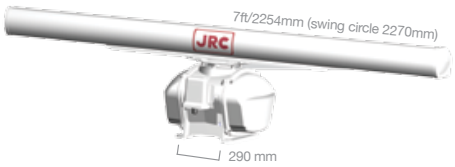
25kW X-band RoHS
NKE-1125-6 Weight 55 kg



25kW X-band RoHS
NKE-1125-9 Weight 60 kg



25kW X-band 3-unit RoHS
NKE-1129-7 Weight 51 kg



25kW X-band 3-unit RoHS
NKE-1129-9 Weight 53 kg

30kW S-band RoHS
NKE-1130 Weight 180 kg

30kW S-band 3-unit RoHS
NKE-1139 Weight 165 kg

250W S-band solid state RoHS
NKE-2632 Weight 85 kg

250W S-band solid state high speed RoHS
NKE-2632-H Weight 90 kg

250W S-band solid state RoHS
NKE-1632 Weight 160 kg

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