

SPECIFICATIONS

Standards	IMO Resolution A.817(19), IEC 61174 ed2
Display Unit	FEA-2107: MU-201CE, 20.1" color LCD, SXGA (1280 x 1024 pixels) FEA-2807: MU-231CE, 23.1" color LCD, UXGA (1600 x 1200 pixels)
Operating System	Windows XP
Useable Charts	IHO/S-57 v.3 vector chart, ARCS raster chart, C-MAP CM93 ed3* *available in the near future
Presentation Modes	True/Relative Motion Noth-up, True/Relative Motion Course-up Relative Motion Head-up, Relative Motion Route-up
Display of data	Own ship : Position, SOG, COG, Heading Route : Planned route, Monitoring route ARPA targets : Range, Bearing, Speed, Course, CPA and TCPA Others : EBL, VRM, Parallel index line, Cursor position, Navigation and pilot data notebook
Route/Waypoint	Route: more than 100 routes Waypoints: 200 waypoints/route
Voyage Calculation	The following data can be calculated Range/Bearing to destination, TTG, ETA, Fuel consumption
Route Navigation Monitoring	Off track, Waypoint, Arrival, Grounding, Depth
Alarms	Off track, Channel limit, Waypoint approach, Depth
Other Functions	Nighttime/daytime display, ARPA target display, Radar overlay, User chart function, Position optimization, MOB, Log book, Pilot data function, Track control system (TCS)* * Please contact the local dealers in your area for details.
Interface	
Input/output	
AIS :	IEC 61162-2 (ABM, BBM)
Radar signal :	Ethernet 100 Base-TX or RAW Video
Input	
Gyrocompass :	IEC 61162-1 (HDT) or Synchro
SDME (Speed log) :	IEC 61162-1 (VBW) or Pulse type
EPFS :	IEC 61162-1 (GLL, GGA, VTG, ZDA, DTM)
Echo Sounder :	IEC 61162-1 (DBT, DPT)
Anemometer :	IEC 61162-1 (MWV)
Water temp Indicator :	IEC 61162-1 (MTW)
Current Indicator :	IEC 61162-1 (VDR)
Output	
Alarms :	Relay output
Printer :	Parallel

Power Supply

Display Unit:	115 - 230 VAC, 1 ϕ , 50/60 Hz
Processor Unit:	115 - 230 VAC, 1 ϕ , 50/60 Hz
LAN Adapter:	24 VDC
B Adapter:	24 VDC

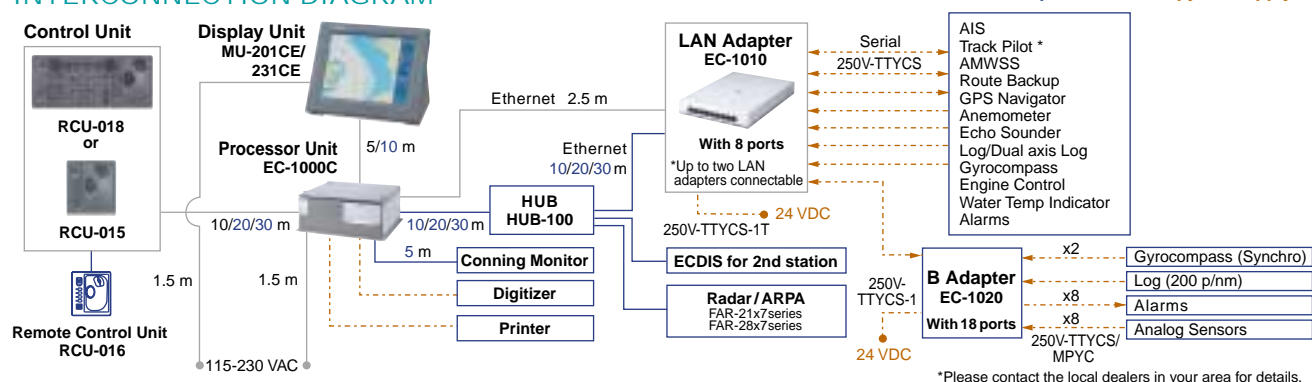
Environment (IEC 60945 test method)

Temperature	
All Units:	-15°C to +55°C

Equipment List

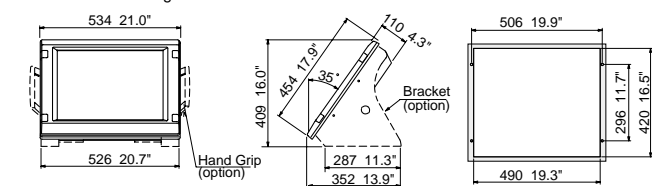
Standard	
1. Display Unit FEA-2107: MU201CE, FEA-2807: MU-231CE	1 unit
2. Control Head RCU-018 or Trackball Control Unit RCU-015 (Specify when ordering)	1 unit
3. Processor Unit EC-1000C	1 unit
4. LAN Adapter EC-1010	1 unit
5. Power Supply Cable for Processor Unit, 1.5 m	1 pc
6. Power Supply Cable for Display Unit, 1.5 m	1 pc
7. DVI Cable between Display Unit and Processor Unit, 5 m	1 pc
8. Cable between Control Unit and Processor Unit, 10 m	1 pc
9. Armored LAN Cable, 2.5 m	1 pc
10. Standard Spare Parts and Installation Materials	1 set
Option	
1. LAN Adapter EC-1010	
2. B Adapter EC-1020 for equipment with analog interface	
3. Remote Control Unit RCU-016	
4. Cable between Control Unit and Remote Control Unit 03S9610, 1.5/10/20/30 m	
5. Hub HUB-100	
6. Radar Overlay Kit for FAR-21x7 series and FAR-28x7 series	
7. Video Card for Conning Display Unit	
8. Cable between Control Unit and Processor Unit, 20/30 m	
9. DVI cable between Display Unit and Processor Unit, 10 m	
10. Armored LAN Cable OP03-186-10/20/30	
11. Hand Grip	
12. Bracket	
13. Connection Stand	
14. Pedestal slim/standard Type	

INTERCONNECTION DIAGRAM

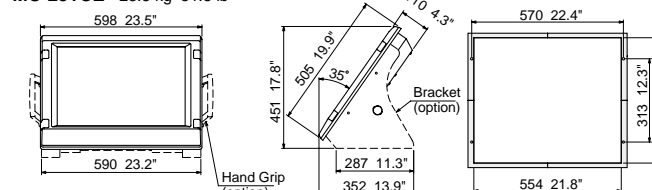


Display Unit

MU-201CE 18.3 kg 40.4 lb

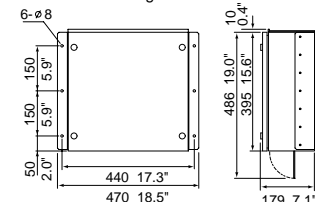


MU-231CE 23.5 kg 51.8 lb

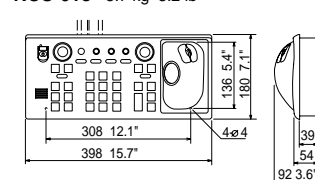


Processor Unit

EC-1000C 15 kg 33.1 lb

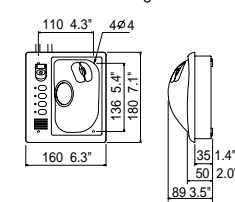


Control Head
RCU-018 3.7 kg 8.2 lb

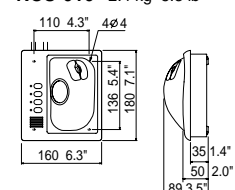


Trackball Control Unit

RCU-015 2.4 kg 5.3 lb



Remote Control Unit
RCU-016 2.4 kg 5.3 lb



TRADE MARK REGISTERED MARCA REGISTRADA
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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FURUNO U.S.A., INC.
Camas, Washington, U.S.A.
Phone: +1 360-834-9300 Telefax: +1 360-834-9400
FURUNO (UK) LIMITED
Denmead, Hampshire, U.K.
Phone: +44 2392-230303 Telefax: +44 2392-230101
FURUNO FRANCE S.A.
Bordeaux-Mérignac, France
Phone: +33 5 56 13 48 00 Telefax: +33 5 56 13 48 01
FURUNO ESPANA S.A.
Madrid, Spain
Phone: +34 91-725-90-88 Telefax: +34 91-725-98-97

FURUNO DANMARK AS
Hvidovre, Denmark
Phone: +45 36 77 45 00 Telefax: +45 36 77 45 01
FURUNO NORGE A/S
Ålesund, Norway
Phone: +47 70 102950 Telefax: +47 70 127021
FURUNO SVERIGE AB
Västra Frölunda, Sweden
Phone: +46 31-7098940 Telefax: +46 31-497093
FURUNO FINLAND OY
Espoo, Finland
Phone: +358 9 4355 670 Telefax: +358 9 4355 6710



FURUNO®

ECDIS

Electronic Chart Display and Information System

20" color LCD

FEA-2107

23" color LCD

FEA-2807



The future today with FURUNO's electronics technology.

FURUNO ELECTRIC CO., LTD.

9-52 Ashihara-cho, Nishinomiya City, Japan Phone: +81 (0)798 65-2111
Fax: +81 (0)798 65-4200, 66-4622 URL: www.furuno.co.jp

Catalogue No. L-161a

TRADE MARK REGISTERED
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Obtain critical navigation information
on a state-of-the-art ECDIS
for safe and efficient travels



The FEA-2107 and FEA-2807 are FURUNO's new ECDIS (Electronic Chart Display and Information System), which have been designed to fully comply with the latest standards and resolutions set by IMO, IHO and IEC.

The electronic chart is compatible with ENC (S57 Edition 3) charts, ARCS charts and C-Map CM93 ed3* (RASTER CHARTS). Where the ENC chart is not available, the ARCS chart may be used. Instant conversion is assured as both chart databases are stored on the ECDIS memory.

State-of-the-art technology has been utilized for high-speed stress-free data-processing. The chart can be overlaid with the data from AIS, radar/ARPA as well as a variety of other navigation information such as position, course, and speed.

*available in the near future

The FEA-2107/2807 can be networked with radar/ARPA, autopilot and a variety of other equipment through the use of Ethernet. This allows high-speed and stable data transfer over a 100 Base-T network. Navigation data can also be shared by each component within the network. This simplifies the system integration and the expandability of the system.

For the display units, the FEA-2107 uses a 20" SXGA LCD and the FEA-2807 uses a 23" UXGA LCD. These high-resolution units provide clear and sharp pictures for easy and comfortable observation. The brightness of the screen can be adjusted according to ambient conditions of the bridge area for optimal viewing around the clock. The ergonomically designed control panel facilitates intuitive and comfortable operation.

FEA-2807: 23" LCD



With optional pedestal

FEA-2107: 20" LCD



With optional mounting bracket
and connection stand

ECDIS
Electronic Chart Display and Information System

- ▶ The electronic chart can be overlaid with a variety of navigation data such as Radar targets, ship's position, heading, speed and others to facilitate safe and efficient navigation.

- ▶ Compatible with ENC (S57 Edition 3) charts, ARCS charts and C-MAP CM93 ed3*
*available in the near future

- ▶ Complies with the following IMO and IEC regulations:

- | | |
|--------------------------|--------------------------|
| • IMO A.817(19) | • IMO MSC.64(67) Annex 5 |
| • IMO MSC.86(70) Annex 4 | • IMO A.694(17) |
| • IEC 61174 edition 2 | • IEC 60945 edition 4 |
| • IEC 61162-1 edition 2 | • IEC 61162-2 edition 1 |



ENC IHO S57 Edition 3

- ▶ Flexible expandability allows the ECDIS to be networked with radar/ARPA, positioning equipment, autopilot and others to consolidate the navigation system

- ▶ High-resolution color LCD

The use of 20"/23" high-resolution SXGA/UXGA LCDs provide crystal clear presentations of navigation information, such as marks, lines and waypoints. The LCDs also allows for installation where space is limited.

- ▶ Streamlined design

The color scheme of the optional pedestal is a stylish pearl white and gray. The streamline design fits perfectly in the modern bridge.



Optional pedestal

- ▶ Ergonomically designed control panel provides ease-of-use

The ergonomically designed control panel consists of a trackball, a thumbwheel and a keyboard. The logically arranged keyboard provides intuitive operation. Optionally, the compact control head only with a trackball and a thumbwheel is available for space-saving installation.



Optional palm control unit

- ▶ User-customizable chart drawing function

- ▶ Route planning applicable to both Mercator's sailing and great-circle sailing

- ▶ Track Control System when connected with autopilot (Option)

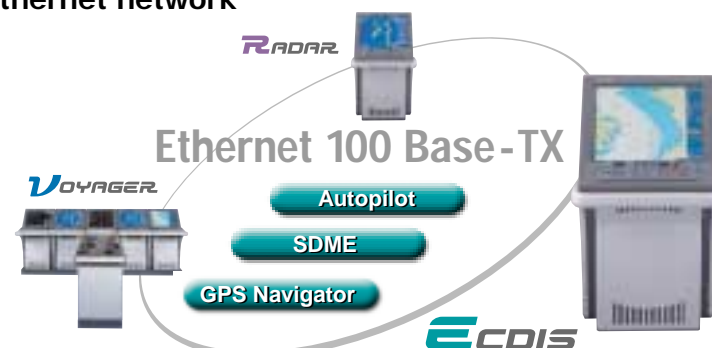
- ▶ Navigation data for the past 12 hours can be recorded

(The data to be recorded includes: time, ship's position, GPS correction data, ship's heading, ship's speed)

- ▶ True Motion and Relative Motion modes are available

- ▶ Navigation data is transmitted through an Ethernet network

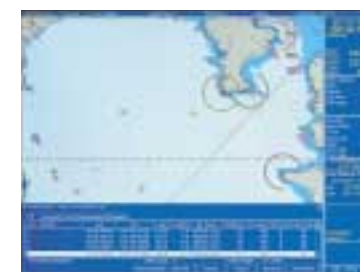
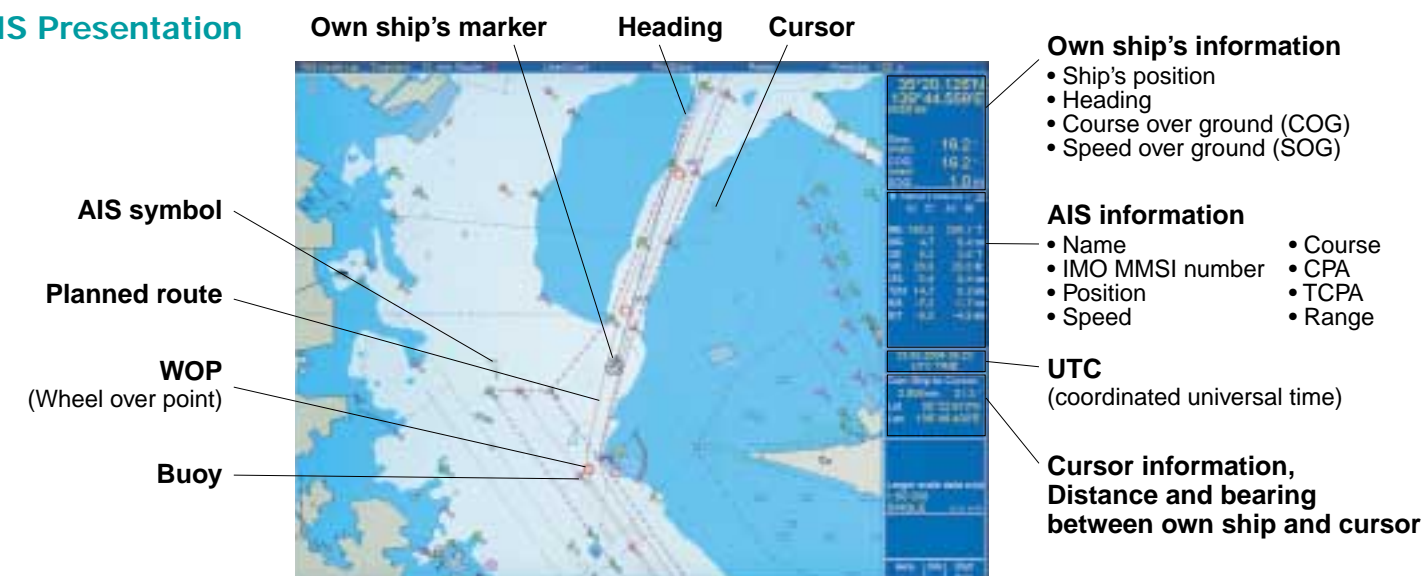
The 100 Base-T Ethernet connection is utilized to link the system with navigation equipment such as a Radar. Installation and maintenance is kept simple by the use of the Ethernet connection, while supporting data transfer that is speedy and stable. The data can be shared with other equipment on the network. The flexibility of the network allows you to have a single system or build a total Integrated Navigation System (INS).



A flexible Ethernet network
allows for future expandability

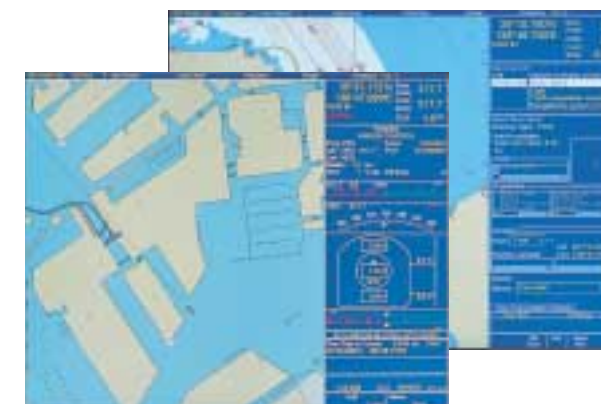
Navigate safely and efficiently with the ECDIS route planning and monitoring

AIS Presentation



Route planning

The operators can plan and determine the precise route with ease, while studying the chart data on the screen. A route can be altered in minute detail, and the changed route can be saved for later use.



Data display

When the cursor is placed upon any mark on the electronic chart, related information about the object such as a buoy, lighthouse, sunken vessel, etc., will be shown in the data cell. Additionally, other navigational information including both own ship's navigational as well as other ship's information from ARPA can also be presented.



Antigrounding

This function informs the operator beforehand of shallow coastal water and other sea conditions that could contribute to the ship going aground. The information about the sea areas is acquired from the electronic chart and ship's draft data is preset in own ship's information so that possible strand can be avoided. Additionally, various alarms are generated to inform the operator of approaching waypoints*, cross track error and course error.

*when connected with autopilot