

A **New** Era of **Navigation**

Discover the Danelec difference...



Danelec ECDIS Family – built to last



DM800 ECDIS
DM700 ECDIS

Electronic Chart Display
& Information System

Danelec systems
Solid · Safe · Simple

Setting the ECDIS
Standard for the
Industry with the most
sustainable **ECDIS** in
the World, maximum
Performance and
Reliability with hassle
free Installation and
Crew Training.

Danelec Marine

Leading Manufacturer

Danelec Marine is a leading manufacturer of Voyage Data Recorders, Electronic Chart Display and Information Systems (ECDIS), and ship-2-shore data solutions, with more than 6,000 installations worldwide.

Founded in 1981, we introduced our first ECDIS solution in 2010. Since that time, every Danelec ECDIS has been built with a commitment to our key product principles: SOLID, SAFE and SIMPLE

SOLID Danish high-quality, application-specific product design with lifetime serviceability for a minimum of 10+ years. Our in-house R&D in Denmark ensures full control over all components, resulting in the highest MBTF in the industry.

SAFE operation ensured by the Danelec eService platform with 24/7 worldwide service & parts. Immediate global service and support delivered by our comprehensive network of 600+ factory-certified techs in 50+ countries.

SIMPLE to use applications focused on usability, high reliability, and maximum performance. Exclusive Software Advanced Protection (SWAP™) technology for fast, easy replacement of equipment in case of failure.

All necessary features and functions, including our state-of-the-art radar overlay, are designed to support all maritime shipping business segments, including container ships, bulkers, multi-purpose and supply vessels, etc.

Danelec ECDIS are built on the Linux platform and allow crew to update ALL software themselves. Due to our innovative software technology, we deliver maximum uptime.

The design and continuous development of Danelec ECDIS solutions are customer-driven, ensuring that our products always meet the current demands and future needs of our customers.

Danelec Highlights

2010

DM800 ECDIS launched, first type-approved ECDIS.

2015

DM800 ECDIS, 2nd generation software, allowing software upgrades by crew.

2017

DM700 ECDIS launched, covering all needs, from a simple retrofit to advanced, network-based installations.

2017

3rd generation software launched. New and improved functionalities as well as full compliance with latest IEC and IHO performance standards (IEC 61174 Ed.4 and IHO S-52 Annex A Ed.4).

2019

Advanced radar overlay launched, complying with latest class regulation rules.

2020

Danelec Marine ECDIS becomes integrate part of the DanelecConnect platform.

Danelec's innovative ECDIS family

– designed
to meet
your current
demands
and future
needs



Maximum Performance

Our product family is designed to provide optimum performance and reliability through application-specific Danish design, 100% proven Linux operating system platform, and SWAP™ technology.



Unique SWAP™ Technology

Our advanced SWAP™ technology enables fast and easy replacement of equipment in case of failure, without reinstalling software and reconfiguring the system.



Compliant with latest Standards

Our systems offer a combination of cutting-edge security and full compliance with the latest IHO/IEC Standards.



Crew-managed Software Updates

Software updates can easily be installed by your crew for optimal efficiency.



Cyber Security

Multiple levels of cyber security are designed into Danelec Marine products from their inception and we have an ongoing program of monitoring and responding to threats as they are identified.



Uniform Technology Platform

Both the DM800 ECDIS and the DM700 ECDIS are based on the same technology platform, providing full flexibility for customers.



Flexible Product Range

Thanks to our flexible range of products, you enjoy multiple hardware choices (combined solutions).



Highly qualified Service Network

Our worldwide support network consists of more than 600 certified, trained service technicians.



Training

Our efficient, flexible training options help ensure that your crews have the skills needed for superior performance.



DM800 ECDIS

The Danelec Marine DM800 ECDIS is the larger member of the Danelec Marine ECDIS family. Equipped with 12 serial channels and 4 Ethernet ports, it offers the capacity for fully redundant operation in an ECDIS cluster with two or more ECDIS units, as well as in systems with a high number of sensor inputs. In order to secure system stability, the DM800 ECDIS controls network and serial data traffic by means of a dedicated front-end computer. This ensures uninterrupted communication even during restart of the DM800 unit.

The DM800 ECDIS is fully interoperable with the DM700 ECDIS unit as well as with other DM800 ECDIS units, in clusters with up to four ECDIS units.

DM800 ECDIS Main Unit

- Linux based ECDIS computer with 32 GB SSD
- 12 serial channels (10 x IEC 61162-1, 2 x IEC 61162-2)
- 4 Ethernet ports (100BASE-TX, RJ45)
- 8 USB ports (USB 2.0)
- AC power (110-230V, 50-60Hz)
- Supplied with ECDIS Alarm Panel and USB Hardware Key
- Type approved for use without Uninterruptible Power Supply (UPS)



DM700 ECDIS

Smaller than its DM800 ECDIS counterpart and equipped with 5 serial channels and 2 Ethernet ports, the Danelec Marine DM700 ECDIS offers a compact solution as a backup ECDIS or for use in systems where the number of sensor inputs is limited. At the same time, it delivers the solidity, safety and simplicity of the ECDIS graphical user interface available in the DM800 ECDIS. The DM700 ECDIS operates on 12 VDC power and can be powered by an ECDIS monitor or a separate power supply.

For larger clusters where more network interfaces than offered by the DM700 ECDIS are needed, both the DM700 ECDIS and the DM800 ECDIS can be connected in a network using the Danelec Marine Managed Ethernet Switch MES 05-001.

DM700 ECDIS Main Unit

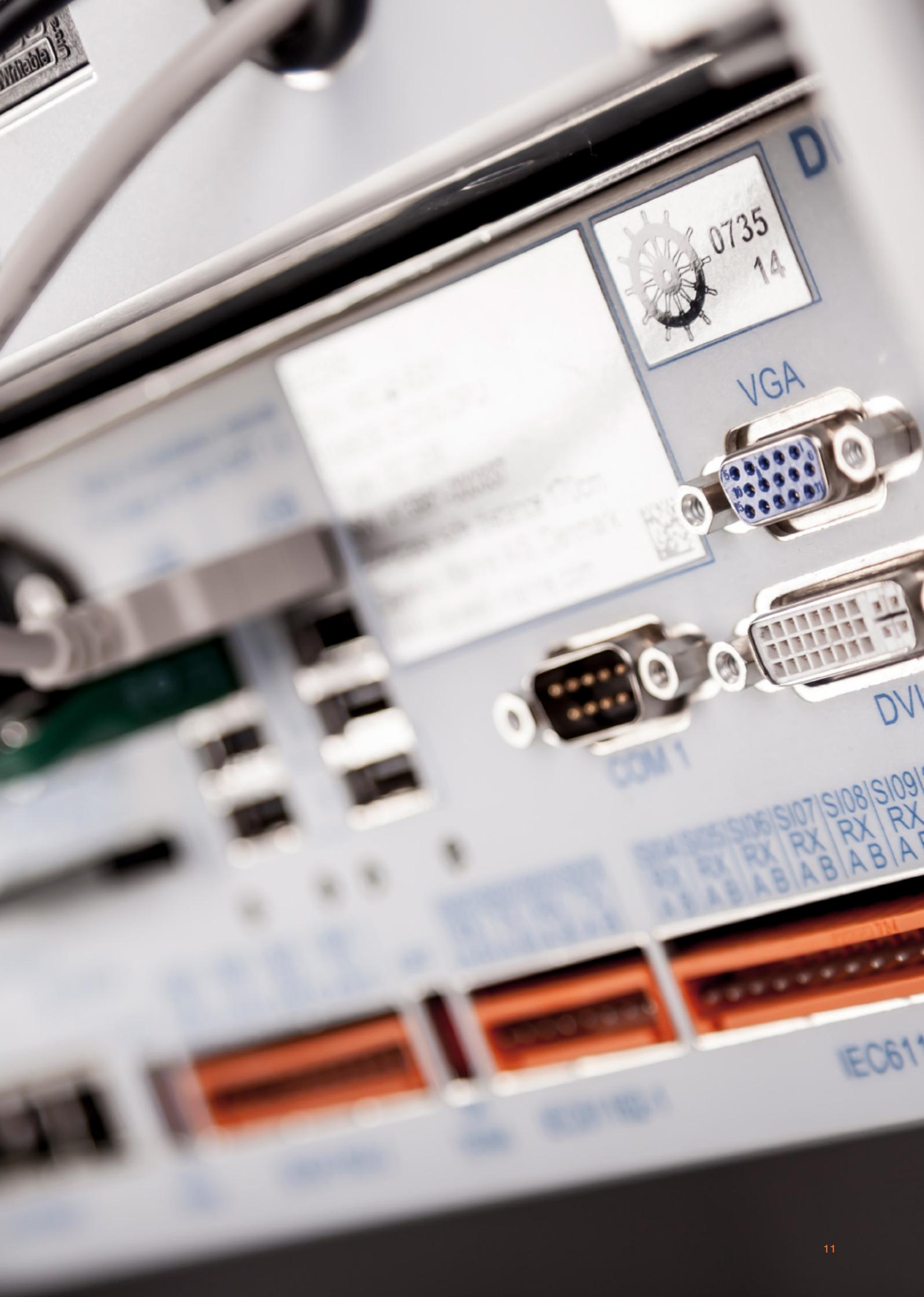
- Linux based ECDIS computer with 64 GB SSD
- 5 serial channels (5 x IEC 61162-2)
- 2 Ethernet ports (1000BASE-T, RJ45)
- Powered from monitor
- Supplied with USB Hardware Key
- 4 USB ports (1 x USB 3.0, 2 x USB 2.0, 1 x internal USB 2.0 for USB Hardware Key)
- Type approved for use without Uninterruptible Power Supply (UPS)



Combination of DM800 ECDIS & DM700 ECDIS

The DM800 ECDIS and DM700 ECDIS Main Units can be configured in any combination as either Master or Back-up Unit, i.e. you may have a configuration with a DM800 ECDIS as Master Unit and a DM700 ECDIS as Back-up Unit. Similarly, you may choose configurations with dual DM800 ECDIS or DM700 ECDIS Units, one serving as Master and the second as Back-up Unit.

The DM800 ECDIS is fully interoperable with the DM700 ECDIS unit as well as with other DM800 ECDIS units, in clusters with up to four ECDIS units. Therefore, in an ECDIS cluster, sensor data connected to a serial channel on one ECDIS can easily be shared over Ethernet with other ECDIS in the cluster.



0735
14

VGA

DVI

COM 1

SI04	SI05	SI06	SI07	SI08	SI09
RX	RX	RX	RX	RX	RX
AB	AB	AB	AB	AB	AB

IEC61

Monitor Options

Danelec offers a range of Danish-made monitor solutions. The monitors are specifically designed for application in highly demanding marine environments, where reliability and robustness are critical. All monitors are IEC60945-approved, lightweight, marine-grade design. The electronic designs are based on carefully selected quality components, ensuring both reliability and long-term availability.

All monitors are produced in Denmark on state-of-the-art manufacturing lines, thereby assuring superior quality.



- Optional: ECDIS Console in classic pedestal design.



**The product range covers
19", 24" and 27" size
monitors.**

*IEC 60945 and IACS E10 Type
Approved for Marine Applications*

DNVIGL MR Certificate

Approved for Radar and ECDIS

- High-quality displays
- 19" 1280x1024 resolution
- 24" and 27" 1920x1080 resolution (16:9 - Full HD)
- Full range backlight dimming
- 1 x VGA, 1 x DVI-D and 1 x Display Port 1.2
- 1 x RS232
- AC power (90-264VAC)
- Power out for computer
- Low power consumption / low heat emission for extended lifetime
- Integrated buzzer
- IP65 front – IP20 rear
- Long life-time with fixed built-state industrial design
- Wide temperature range

Advanced Keyboard / Trackball



This 82 key backlit keyboard features a compact keyboard with integrated waterproof 50 mm trackball and scroll function and is designed to meet and exceed the toughest applications and requirements. This Rugged Keyboard offers the ultimate solution with regard to quality, reliability, conformity, and flexibility in a compact layout. Labelled function keys ensure a seamless integration with the Danelec software. Available in either a standalone version or a flush mount version, this keyboard provides a reliable solution for data input in the most demanding applications.

Specs:

- Rugged, military-grade marine keyboard
- Chemically and abrasion resistant keys with red backlight
- IP66 rated enclosure protection
- Connection to Main Unit via USB port
- Supplied with 50 mm Dura Track trackball

Flush mount version:

W: 444,5 mm
H: 55,2 mm
D: 190,5 mm
W: 2,1Kg

Standalone version:

W: 424 mm
H: 63 mm
D: 170 mm
W: 2,1 kg

Basic Keyboard / Trackball



This 92 key keyboard features a compact rubber keyboard with integrated waterproof 25 mm trackball and scroll function. The rubber keys are proven for ease of typing combined with a long life time. Dedicated printing on the function keys ensures a seamless integration with the Danelec software. Available in either a standalone version or a flush mount version, this keyboard provides a reliable solution for data input in the most demanding applications.

Specs:

- Rugged, IP67 waterproof marine keyboard
- Contactless trackball with reduced friction
- Removable ball for easy cleaning
- Non-corrosive enclosure with Vesa mount

Flush mount version:

W: 350 mm
H: 159 mm
D: 36 mm
W: 0,6 kg

Standalone version:

W: 354,5 mm
H: 163,5 mm
D: 38,6 mm
W: 0,8 kg



Danelec Marine ECDIS

100% Linux-based, 100% High Performance

Our goal at Danelec is to create an ECDIS that runs consistently, reliably, and securely, every time. That's why we built our ECDIS solutions using Linux, a proven, open source operating system for embedded devices. This foundation permits us to create ECDIS software that is common across all installations and optimize quality through in-depth testing that covers all installation configurations.

Linux is also one of the most secure operating systems in the world. We control the source code and every feature within the operating system, ensuring that no hidden features might compromise the system. Utilizing Linux also enables us to create a single firmware version that includes the operating system, system configuration applications, I/O interface firmware, and ECDIS application in a single distribution package.

This approach also ensures the security of system updates. Every update package is digitally signed by Danelec Marine, eliminating the risk for software updates, and therefore your vessel's safety, to be compromised. However, the software upgrades themselves remain easy to implement, ensuring that your crew can easily and confidently update the system as necessary using a single, secure update package.

With Linux, Danelec Marine has created an ECDIS solution you can depend upon, one that is secure, safe, and simple.



SoftWare Advanced Protection, SWAP™ Technology

PROTECT THE

Unique Benefits that Minimize Your OPEX

The Danelec strategy is to design SIMPLE products that minimize operational and maintenance costs. We believe that we offer the lowest OPEX in the market – for both operation and support. The SWAP™ technology was already a key Danelec feature in 2002, forming part of our VDR (Voyage Data Recorder) Family. The SWAP™ technology is a fast and easy way to ensure uninterrupted operation of the ECDIS.



1 When a Danelec-trained technician reports to the ship for a service call, he arrives with a replacement unit in hand.



2 The technician removes the memory card from the old unit.



3 He switches out the old unit with the replacement unit.



4 Then he inserts the memory card into the new unit.

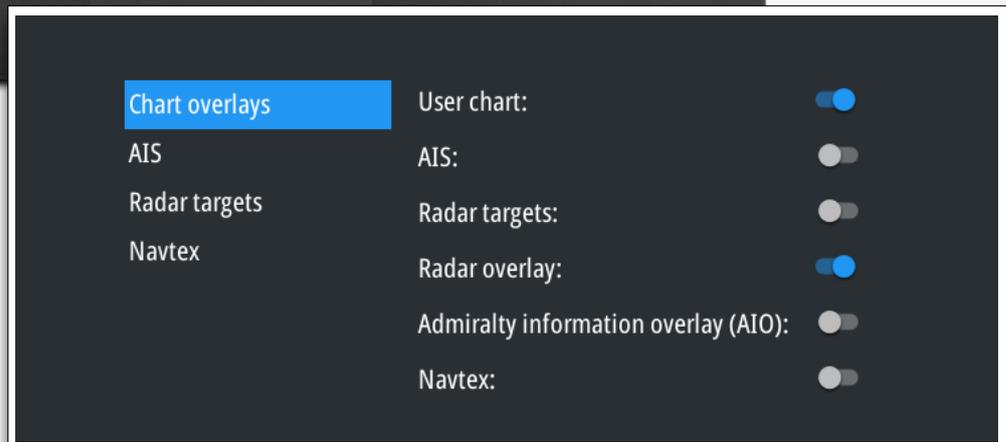
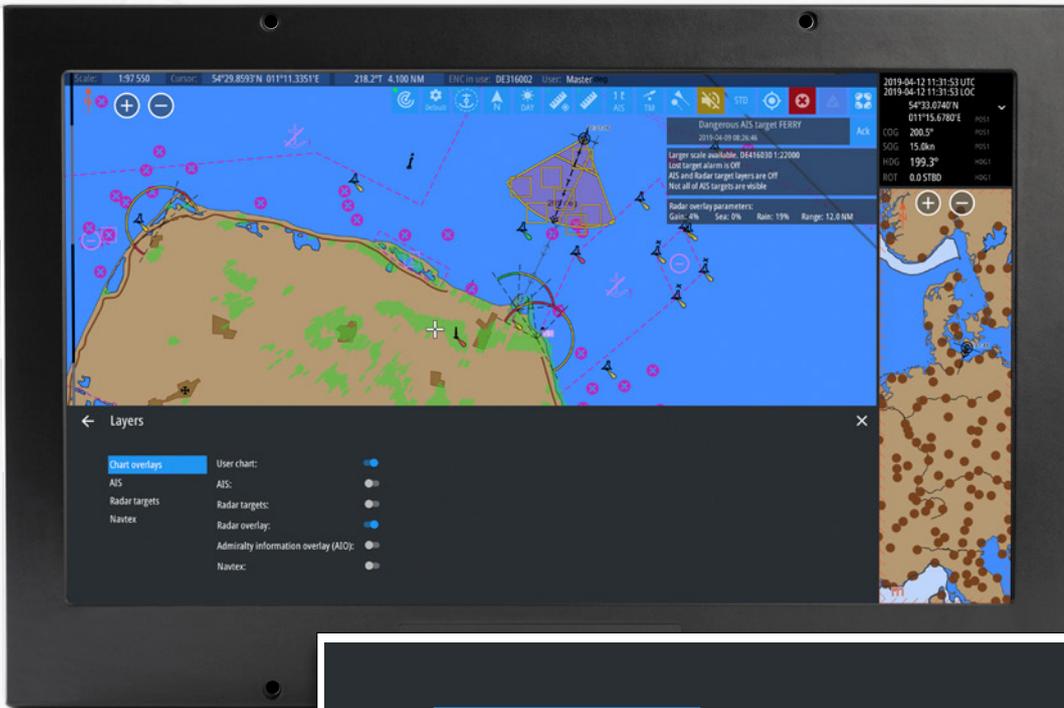


5 The old unit is brought to shore for repair.



6 The customer only pays for the repair cost at our factory.

Danelec Marine User Interface



User Interface

A Danelec Marine ECDIS cluster can be configured using any combination of up to four DM800 ECDIS and DM700 ECDIS units, allowing the solution to be tailored for the needs of the individual vessel. The DM800 ECDIS and DM700 ECDIS provide a uniform graphical user interface, enabling crew to operate the systems irrespective of the type of hardware that runs the ECDIS application.

The Danelec Marine ECDIS family runs all commercial Electronic Navigational Charts (ENCs) as well as NAVTOR System Electronic Navigational Charts (SENCs).

The user-friendly chart update mechanism allows the crew to update charts when necessary.

To maximize security, the ECDIS software is distributed as encrypted, signed software packages, and the simple software update process can, if necessary, easily be done by the crew.

If the replacement of an ECDIS unit becomes necessary, the Danelec Marine ECDIS units include our unique SWAP™ technology, ensuring fast and simple replacement.

Main Features

- Unrestricted combination of DM800 ECDIS and DM700 ECDIS in ECDIS clusters
- Uniform graphical interface on all ECDIS hardware
- Support for all major commercial ENCs
- Simple, safe software update process
- Easy-to-use, intuitive user interface
- Easy overview and maximum 3-click drill-down to any feature
- Additional overlay functions (AIS, AIO, NAVTEX, radar overlay etc.)
- Advanced user features (logbook playback, improved route monitoring etc.)



Danelec Marine Radar Overlay



Radar Overlay

The Danelec Marine ECDIS products permit the inclusion of up to four Danelec NRP 01-001 Network RADAR Processors in an ECDIS cluster. This makes it possible to display the signal from any of up to four RADARs as a graphical overlay on the ECDIS chart. The result is an enhanced, user-friendly electronic chart display with RADAR overlay.

The NRP 01-001 distributes digitized video to all ECDIS units in a cluster using UDP multicast. Apart from the NRP 01-001 unit and cables used to connect the latter to the RADAR and the ECDIS, no extensions are needed to the ECDIS product.

The software necessary to display the RADAR overlay is an integral part of the ECDIS software, distributed with the ECDIS software package as a standard feature.

Setup for the NRP 01-001 is fully integrated into the ECDIS configuration wizard. Thanks to a high degree of configurability with regards to input signals, the NRP 01-001 is also capable of digitizing a wide range of RADAR signals. The operator can adjust the display range and clutter parameters at any time for any configured NRP unit, thereby tuning the overlay for the best visibility to compensate for weather conditions.

Main Features

- User-friendly enhancement of chart display with RADAR overlay
- High degree of configurability
- Easy adjustment during navigation
- Integral part of the ECDIS software distribution

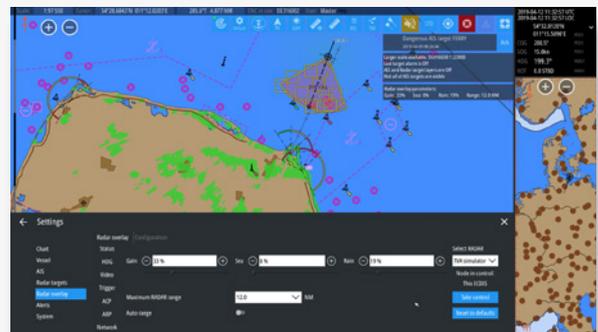
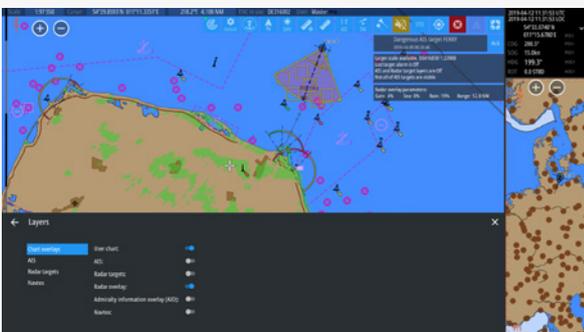


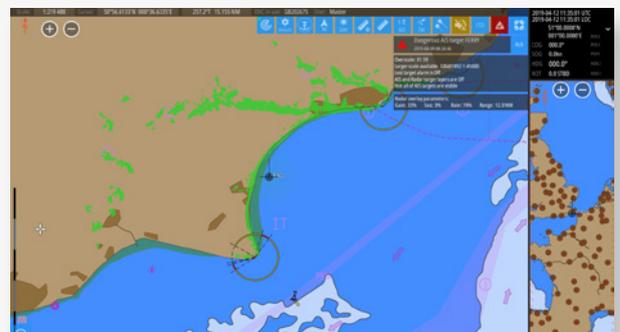
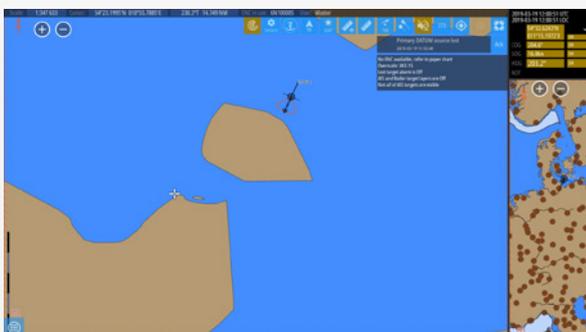
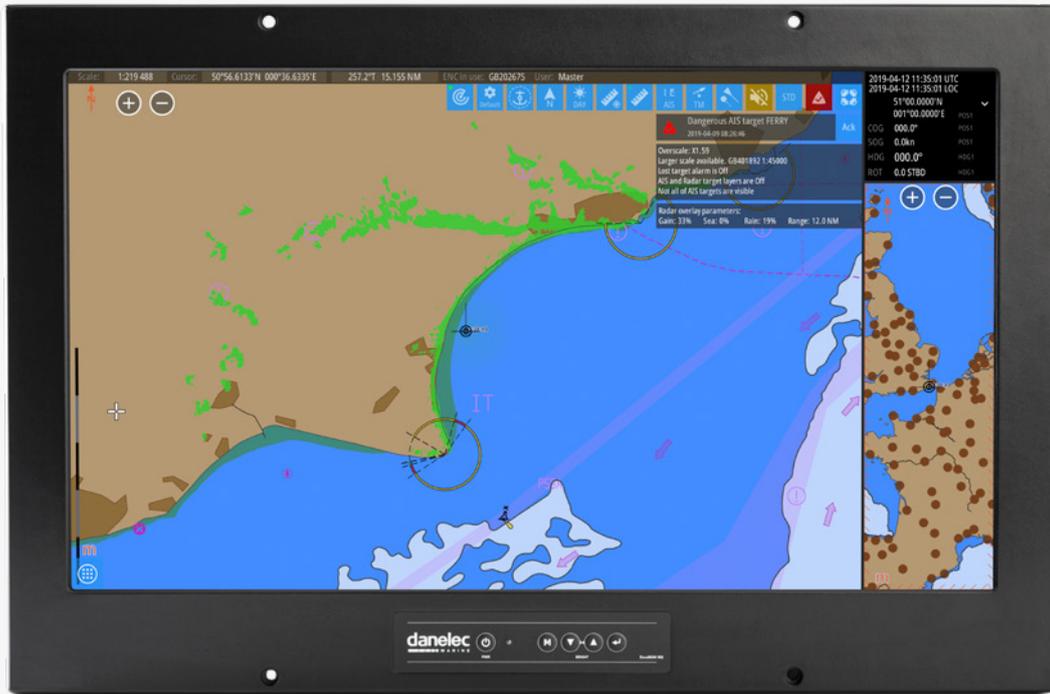
Industry-leading Chart Solutions

The Danelec ECDIS platform runs all commercial Electronic Navigational Charts (ENCs), including Admiralty Vector Chart Service (AVCS) in S-57 and S-63 formats, as well as NAVTOR System Electronic Navigational Charts (SENC) data. It also incorporates additional overlay functions, such as Admiralty Information Overlay (AIO), NAVTEX, etc.

Updating is as easy as a click of a button – with our seamless update service, Danelec ECDIS users receive automatic notifications when updates are available. In addition to the chart database, all permits, AIO data, and subscribed digital publications are also updated at the same time.

The vessel's chart portfolio is easily handled via a web-based chart management (PAYS) chart-licensing scheme, eliminating the need to order and manage an electronic chart portfolio on board.





Danelec ECDIS Training Solutions

ECDIS training is essential to ship owners, ship managers, and crew. Danelec ECDIS training solutions are easy to use, intuitive, and user-friendly and are in accordance with IMO requirements for type-specific ECDIS familiarization training. You will therefore find Danelec ECDIS training to be the most user-friendly and easy to learn training solution in the industry.

The combination of our ECDIS knowledge and our instructional expertise enable you to become familiar with our systems as efficiently as possible and transfer that knowledge to your crew.

Onshore

Online / Computer Based Training (CBT)

Onboard

Train-the-Trainer (option)



Learn more about the Danelec Training Hub Discovery and training locations at: www.danelec-marine.com/ecdis-training



Onshore Classroom Training



Online / Computer Based Training (CBT)



Onboard



Option: Train-the-Trainer

Danelec Marine Worldwide Service Network

Our worldwide network of distribution and service partners ensure cost effective installations, and provide service repairs 24/7 with 600+ factory-trained personnel in 50+ countries.

Technical difficulties may result in unnecessary and long stay in port which is associated with high costs. As a provider of essential electronic products (IMO rules), it is Danelec Marine's clear strategy to act as a credible partner, and thus help to ensure the efficiency of shipping. Technical breakdowns can always be remedied with a simple and quick visit by a local service technician or a specialist from one of our departments.

- Certified Service Center (CSC)
- Authorised Service Partner (ASP)
- Authorised Sales Agent (SA)



Learn more details about our Danelec Service Partners at:
www.danelec-marine.com/#service



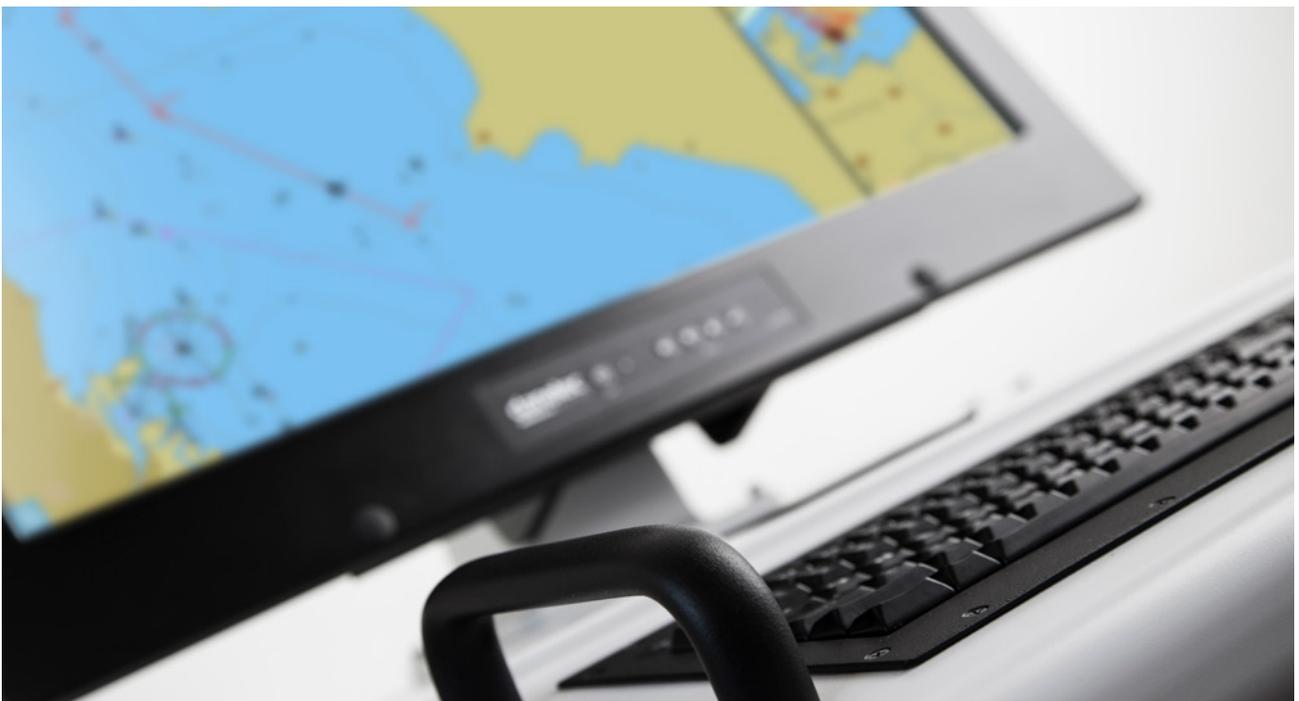


Introduction to Danelec Marine User Group

Market trends and customer needs guide Danelec's overall policy and strategy for our ECDIS solutions.

The Danelec User Group is intended to form an open space for exchanging experience, ideas, and best practices for our ECDIS solutions with a mission of gathering feedback for future development and share best practices in the use of our ECDIS solutions with our customers.

Our product software development is market-driven with our roadmap also relying on customer input from the various maritime market segments (tankers, bulkers, container, multi-purpose and supply vessels, etc.).



Standard



DM800 ECDIS Main Unit (Master or Back-Up Unit)

Specifications

Dimensions: W 342 mm x H 287 mm x D 238 mm

Weight: 7,5 kg

- Linux-based ECDIS computer with 32 GB SSD
- 12 serial channels (10 x IEC 61162-1, 2 x IEC 61162-2)
- 4 Ethernet ports (100BASE-TX, RJ45)
- 8 USB ports (USB 2.0)
- AC power (110-230V, 50-60Hz)
- Supplied with ECDIS Alarm Panel and USB Hardware Key

Standard



DM700 ECDIS Main Unit (Master or Back-Up Unit)

Specifications

Dimensions: W 211 mm x H 35 mm x D 161 mm

Weight: 0,95 kg

- Linux-based ECDIS computer with 64 GB SSD
- 5 serial channels (5 x IEC 61162-2)
- 2 Ethernet ports (1000BASE-T, RJ45)
- 4 USB ports (1 x USB 3.0, 2 x USB 2.0, 1 x internal USB 2.0 for USB Hardware Key)
- Powered from monitor
- Supplied with USB Hardware Key

Standard



DM800 ECDIS & DM700 ECDIS Flexible System Configurations

Specifications (dual system)

- 12 + 5 serial channels
- 3 Ethernet ports for extra equipment
- Additional Ethernet ports available using optional Ethernet switch
- Supplied with USB Hardware Key
- Full synchronization of ECDIS data (ENC Databases, Permit files, User and mariners objects etc.) between ECDIS units.

Standard



Advanced Keyboard / Trackball

Specifications

Dimensions (standalone version): W 424 mm x H 63 mm x D 170 mm

Weight: 2,1 kg

Dimensions (flush mount version): W 444,5 mm x H: 55,2 mm x 190,5 mm

Weight: 2,1 kg

- Rugged, military-grade marine keyboard
- Chemically and abrasion resistant keys with red backlight
- IP66 rated enclosure protection
- Connection to Main Unit via USB port
- Supplied with 50 mm Dura Track trackball

Standard



Basic Keyboard / Trackball

Specifications

Dimensions (standalone version):

W: 354,5 mm x H: 163,5 mm x D: 38,6 mm

Weight: 0,8 kg

Dimensions (flush mount version): W: 350 mm x H: 159 mm x D: 36 mm

Weight: 0,6 kg

- Rugged, IP67 waterproof marine keyboard
- Contactless trackball with reduced friction
- Removable ball for easy cleaning
- Non-corrosive enclosure with Vesa mount

Standard



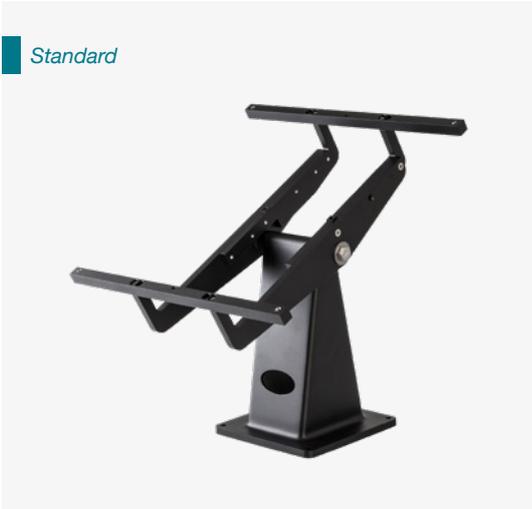
Monitors

Specifications

Dimensions: 19" 24" 27"

- High-quality displays with full range backlight dimming
- 19" 1280x1024 resolution
- 24" and 27" 1920x1080 resolution (16:9 - Full HD)
- 1 x VGA, 1 x DVI-D and 1 x Display Port 1.2
- 1 x RS232
- AC power (90-264VAC) and power out for computer
- Low power consumption / low heat emission for extended lifetime
- Integrated buzzer
- IP65 front – IP20 rear
- Long life-time with fixed built-state industrial design
- Wide temperature range

Standard



Bracket for 24" / 27"

Specifications

Dimensions 24": W 360 mm x H 438,9 mm x D 170 mm

Dimensions 27": W 360 mm x H 482,2 mm x D 170 mm

Weight: 6,5 kg

- Tower made of aluminium
- Mounting bracket made of steel
- Sea water resistant materials
- Turnable 180 degrees
- IEC60945:2002 approved

Standard



Bracket for 19"

Specifications

Dimensions: W 480 mm x H 384 mm x D 170 mm

Weight: 6,5 kg

- Tower made of aluminium
- Mounting bracket made of steel
- Sea water resistant materials
- Turnable 180 degrees
- IEC60945:2002 approved

Standard



USB Key

Specifications

Dimensions: W 16 mm x H 8 mm x D 40,5 mm

Weight: 5,63 g

- Unique 28 characters USERPERMIT for chart installation

Optional



ECDIS Console

Specifications

Dimensions: W 620 mm x H 934 mm x D 679 mm

Weight: 64 kg (without monitor)

- Danelec ECDIS Console in classic pedestal design
- Housing for ECDIS computer, Alarm Panel, Keyboard/ trackball and monitor
- Prepared for flush mounting of keyboard (with handrail)
- Prepared for top mounting of monitor

Optional



Network RADAR Processor (NRP 01-001)

Specifications

Dimensions: W 203 mm x H 120 mm x D 35 mm

Weight: 0,4 kg

- 12-24 VDC power supply
- EN60945-compliant
- Analogue radar inputs, wide range of input signal support: Analogue video, Trigger, ACP/ARP
- 100 MHz sample rate
- Supports PRFs up to 16kHz and scan rates up to 120RPM
- RJ45 Ethernet adapter IEEE802.3 1000BaseT for ECDIS connection

Optional



Uninterruptible Power Supply

Specifications

Dimensions: W 202 mm x H 197 mm x D 374 mm

Weight: 9,1 kg

- Danelec ECDIS is type approved without the need for UPS
- UPS is available if flag state or customer requires
- Backup time: 13.5 min. (130W) at half load / 5.5 min. (260W) at full load
- AC power (230V, 50-60Hz)
- Output power capacity: 420VA / 260W
- Marine approved (IEC 60945)



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Danelec ECDIS Family – built to last

www.ecdis.com

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