

DM100 S-VDR

Simplified Voyage Data Recorder



Danelec systems
Solid • Safe • Simple

- *New generation S-VDR with break-through SWAP technology™*
- *IMO-compliant with S-VDR standards – and beyond*

Discover the Danelec difference...

danelec
MARINE

About the **Simplified** VDR Performance **Standards**

About the Simplified VDR Performance Standards

In December 2004 the Maritime Safety Committee of the International Maritime Organization (IMO) amended its original carriage requirements for Voyage Data Recorders (VDRs) to allow retrofitting a Simplified VDR (S-VDR) on existing cargo ships, due to the difficulties in interfacing to existing analog sensors on older vessels. The requirements defined in MSC.163(78) state that for S-VDRs installed on cargo vessels of 3,000 GT and above which were built before July 1, 2002:

- Data shall be recorded in removable memory of the S-VDR for a minimum of 12 hours
- Data shall be recorded in a fixed capsule or a float-free capsule for a minimum of 12 hours
- Functionality of saving the recorded data following an incident shall be provided, which can be initiated by the crew without any interruption to the recording process
- Data from the GPS, speed log, gyro compass, VHF and bridge audio shall be recorded
- Radar image and/or data from the AIS shall be recorded
- Data from other sensors shall be recorded, if output is available in IEC 61162 format

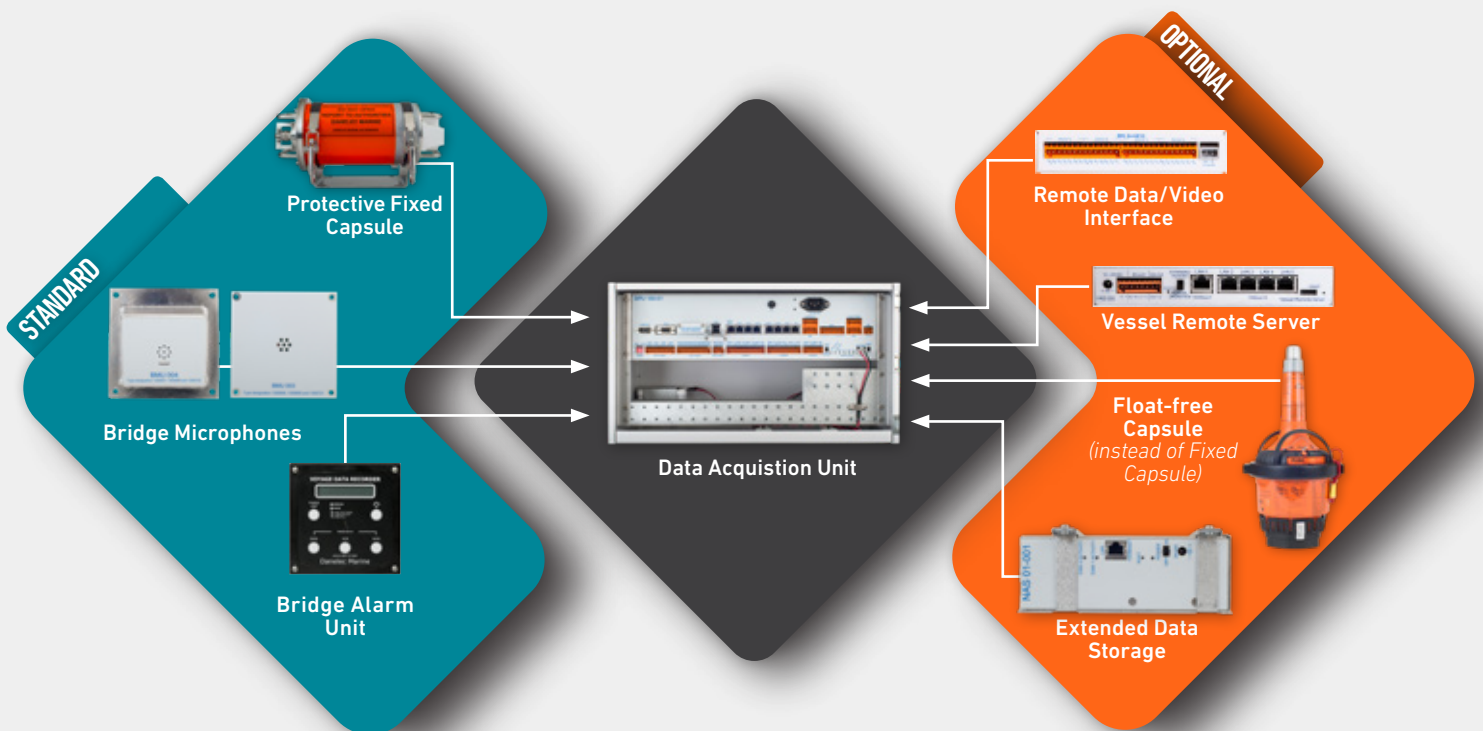
Recording media

User interface

Recorded sensors

Is Your System IMO-Compliant?

All installed S-VDR systems must be compliant with the applicable standards. Our newest generation DM100 S-VDR meets all requirements and performance standards of MSC.163(78) and IEC 61996-2 Ed.2. Danelec S-VDR systems are designed to record and store, in a secure and retrievable form, information concerning the ship's position, movement, physical status and command and control for the period leading up to and following an incident. Designed specifically for maritime application down to the last component, Danelec S-VDRs offer high quality and reliability in a compact and lightweight, easy-to-install solution.



VDR Explorer Playback Software

Danelec VDRs are supplied with the VDR Explorer playback software as standard. The software runs from any PC and can provide real-time monitoring and replay recorded data.

The recorded data can be presented in a large variety of both graphical and numerical ways, and is extremely easy and user friendly to operate.

- Windows based application for playback
- Intuitive user interface
- Customizable conning page
- Extract data from the VDR through a web browser via Web Extractor tool

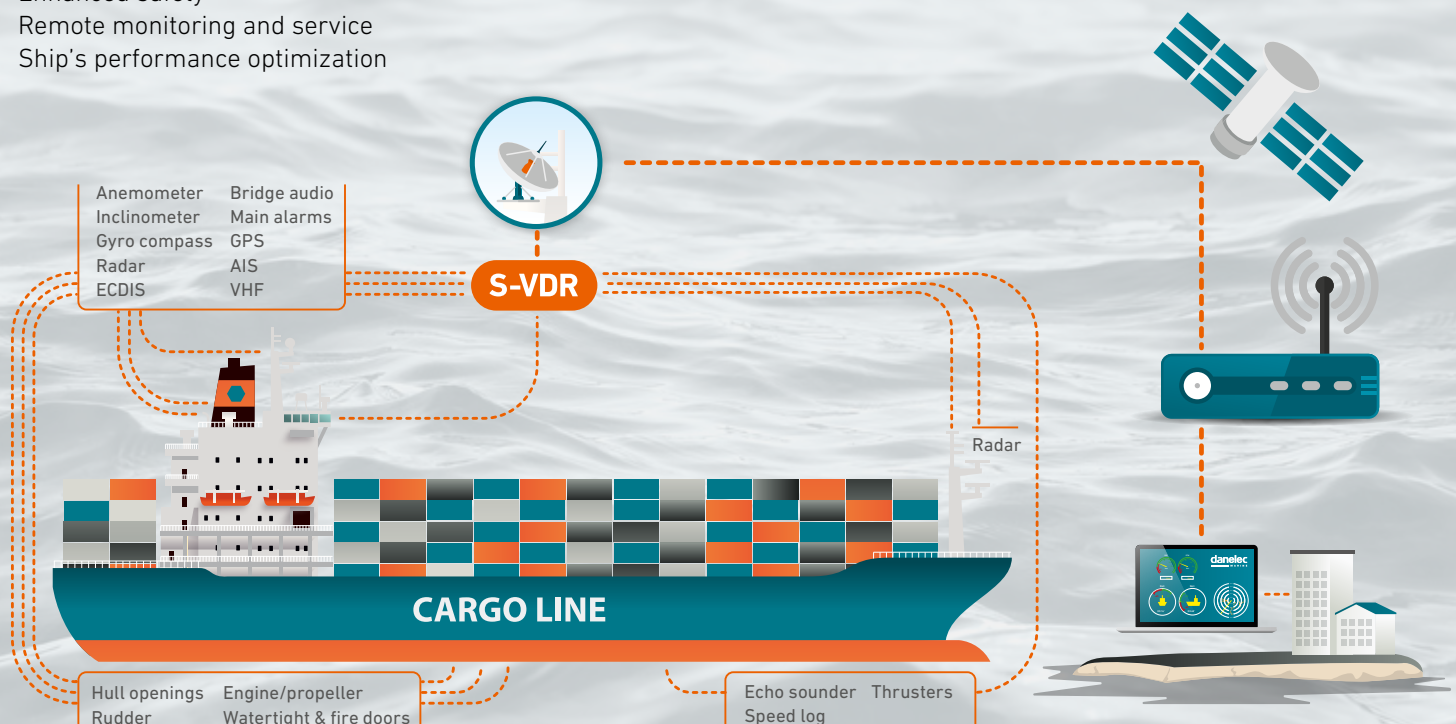


Complies with MSC.333(90) requirements for data download and playback software

DanelecConnect Remote Management Solution

DanelecConnect is a web-based remote management service available with the Danelec DM100 S-VDR. As a value-added interface, DanelecConnect allows selective transmission of data from the VDR via satellite to the home office without being limited by satellite capacity onboard vessels. Remote management provides a wide range of benefits concerning control, safety and optimization without the need of physical attendance to the vessel, such as:

- Enhanced safety
- Remote monitoring and service
- Ship's performance optimization



STANDARD



W: 495 mm
H: 250 mm
D: 242 mm
W: 11 kg

Data Acquisition Unit

12 hours of recording capacity on removable USB disc • 10 inputs for bridge audio and VHF • 12 inputs for serial data (IEC 61162-1, IEC 61162-2 and Modbus) • AC power (110-230V, 50-60Hz) • Built-in UPS with NiMH batteries

STANDARD



W: 360 mm
H: 195 mm
D: 208 mm
W: 8 kg

Protective Fixed Capsule

48 hours of recording capacity • 90 days acoustic underwater beacon • Supplied with 50 meters cable • Ethernet (100BASE-TX) interface • Powered from Data Acquisition Unit (PoE)

OPTIONAL



W: 236 mm
H: 553 mm
D: 214 mm
W: 4.8 kg

Float-free Capsule

48 hours of recording capacity • Supplied with 50 meters cable • Ethernet (100BASE-TX) interface • Powered from Data Acquisition Unit (PoE) • COMSAR/ COSPASS approved EPIRB

STANDARD



W: 144 mm
H: 144 mm
D: 64 mm
W: 1.5 kg

Bridge Alarm Unit

Incident save functionality • Alpha numeric LCD display • LED indicators • Serial RS-422 interface • Powered from Data Acquisition Unit

STANDARD



(Outdoor / Indoor)
W: 96 / 84 mm
H: 96 / 84 mm
D: 60 / 30 mm
W: 0.5 / 0.1 kg

Bridge Microphones
(Outdoor / Indoor)

Built-in buzzer for self-test • Built-in amplifier and filters • IP66 water resistant (outdoor only) • Powered from Data Acquisition Unit

OPTIONAL



W: 61 mm
H: 172 mm
D: 116 mm
W: 1.1 kg

Extended Data Storage

Up to 6 months of recording time • Marine approved (IEC 60945) • SSD and HDD versions • Storage capacity: 256GB, 512GB or 1TB • Ethernet (1000BASE-T) interface • AC power (110-230V, 50-60Hz) through AC adaptor

OPTIONAL



W: 141 mm
H: 32 mm
D: 163 mm
W: 0.3 kg

Remote Data Interface
(Serial/Analog/Digital)

8 inputs for serial data (IEC 61162-1, IEC 61162-2 and Modbus) (in serial version) • 8 inputs for analog data (in analog version) • 24 inputs for digital data (in digital version) • Powered from Data Acquisition Unit or locally • Can be daisy chained • Can operate as standalone equipment • Support for SWAP technology™

OPTIONAL



W: 149 mm
H: 49 mm
D: 206 mm
W: 0.5 kg

Remote Video Interface
(Analog: BNC / Digital: DVI-I)

2 inputs for video recording • RGBHV (in analog version) or DVI-D / DVI-A (in digital version) • Ethernet (100BASE-TX) interface • Powered from Data Acquisition Unit (PoE)

OPTIONAL



W: 180 mm
H: 30 mm
D: 100 mm
W: 0.3 kg

Vessel Remote Server

DIN rail mountable or standalone • 1 x Ethernet (1000BASE-T) port for the VDR • 4 x Ethernet (100BASE-TX) ports for the ship's LAN networks • 12-24V DC power input • AC power (110-230V, 50-60Hz) through AC adaptor • Normal or Extended Access operating modes • Support for SWAP technology™

OPTIONAL



S-VDR Conversion Kit

Reduces installation time by facilitating replacement of existing equipment regardless make or model • Pre-drilled universal adaptor plates and mounting brackets • Serial, digital and analog interfaces • Existing cabling can typically be reused • Software tool for conversion of old configuration files

A Revolution in Shipboard Service

Servicing and repairing shipboard electronics can be time consuming and expensive. There are the complicated logistics of scheduling a service call and finding a properly trained technician – sometimes from a remote port. Then there is the question of whether the technicians have the correct spare parts on hand and can complete the repairs in time to meet the ship's sailing schedule.

Now there is a way to save time and money, while eliminating in-port delays, thanks to the new **SoftWare Advanced Protection (SWAP)** solution from Danelec. With SWAP technology™, all system software and configuration, as well as programming data, is automatically saved on a hot-swappable memory card that can easily be removed from the old unit and inserted into the new one. Relocating the repair from ship to shore saves hours of time in re-installing software and re-programming the unit.

The Traditional Way

In a typical service scenario, the technicians board the ship, troubleshoot the problem and determine what spares are needed to make the repair. If the parts are not available locally, they must be ordered. Depending on the system, port state control authorities may prevent the ship's departure until the repairs are made, resulting in expensive demurrage and port costs.

If the ship is allowed to sail, the spares must be delivered to its next port, requiring another expensive service call to complete the repairs.

The Danelec Way

The SWAP solution is quick and easy:

- When a Danelec-trained technician reports to the ship for a service call, he arrives with a replacement unit in hand
- The technician removes the memory card from the old unit
- He switches out the old unit with the replacement unit
- Inserts the memory card into the new unit
- Then he takes the old unit to shore for repair

The Benefits are Invaluable

SWAP technology™

- **Saves time** by enabling onboard repairs to be accomplished in a matter of hours, not days
- **Saves money** by reducing man hours for service calls
- **Protects valuable shipboard data** on a hot-swappable memory card
- **Keeps ships on schedule**, eliminating in-port delays for repairs



Danelec systems
Solid • Safe • Simple

WE PROVIDE THE MOST EFFICIENT PRODUCT AND SERVICE SOLUTION TO THE MARITIME INDUSTRY



**SAFETY
FIRST**

Safety at sea is priority #1



**OPTIMIZATION
OF OPERATIONS**

Enhance fleet operational efficiency



**TOTAL COST
OF OWNERSHIP**

Maximize return on investment

SOLID

PRODUCT DESIGN

- **Dependable operation** | *Equipment that is built to be at sea*

Danelec products are based on an **application-specific design** to ensure extreme reliability. Fewer components mean **fewer points of failure**, resulting in the highest MTBF in the industry.

- **Future proof** | *Never obsolete, always supported*

We guarantee **serviceability** of our products during their **lifetime** for a minimum of 10 years. Since our products are developed in-house, we have **full control** over all components.



High quality Danish design
10+ years service guarantee

SAFE

SERVICE & SUPPORT

- **Immediate support anywhere** | *There is always a service tech near your ship*

Our extensive global network of service centers carry spare parts and provide service **repairs 24/7** with 600+ factory-certified techs in 50+ countries.

- **World class service** | *Consistent, efficient and transparent*

Danelec **eService platform™** automates and streamlines traditional manual processes, bringing unprecedented levels of consistency and efficiency to shipboard service.



24/7 worldwide service & parts
Danelec eService platform™

SIMPLE

OPERATION & MAINTENANCE

- **Information at your fingertips** | *Capture shipboard data and put it to use*

Our range of **remote management solutions** enable instant and cost-optimized access from shore to ship, so that you can harness the power of big data for informed decisions and more efficient asset management.

- **Maximize uptime** | *Rest assured your ship sails on schedule*

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



Remote management solutions
SWAP technology™