VDR / S-VDR DEBEG 4300
Voyage Data Recorder

As a leading system integrator SAM Electronics decided to combine the advantages of an Integrated Navigation System with the VDR. The result is the VDR DEBEG 4300. It was especially designed for the system integration into the Radarpilot 1000/1100 family or the NACOS xx-5.

In the past the VDR was in the most cases just an additional black box in the equipment room. It was connected to nearly every sub-system on board to collect data, but there was no data transfer the other way around. By choosing the way of integration this has changed entirely.

Essential functions of the VDR DEBEG 4300 are implemented in the Radarpilot, which combines a user friendly operation and improved situation awareness with a cost effective and tailor made solution for a state of the art bridge system.

The VDR can be used for newbuildings as well as for retrofit. If necessary external converter will be used to provide the required interfaces.

By using standard PC components it is possible to read the recorded data on every laptop and download the recorded data from the internal harddisk to a replay station via Ethernet.
If the VDR is connected to a SATCOM system it offers a wider range of functionality than any other VDR on the market. The DEBEG 4300 series meets all requirements of the IMO Resolution 861(20) and the performance and test standards of IEC 61996.

VDR Features

- Alarm handling and starting of the download by the Radar 1000
- Harmonized user interface
- Digital recording of radar video
- Remote control and maintenance via SATCOM (option)
- SSAS function (option)
- Extended recording time
- ECDIS - based replay system (on board as well as on shore)
- Extension to ship's network by Ethernet switch

SAM Electronics

an L3 communications company

System Description

The VDR DEBEG 4300 consists of 4 core modules, the Data Concentrator, the UPS, the External Data Acquisition and the Final Recording Medium.

Data Concentrator

The Data Concentrator includes all components necessary for data acquisition and processing. These are:

- Industrial PC including the internal harddisk with a capacity for 12 hours (optional 24 hours) recording time for processing and storing the recorded data.
- Removable PCMCIA drive for the backup of the recorded data Depending on the data to be recorded, several complete 12 hour backups can be stored on this drive.
- Audio Module with microphones for recording the bridge audio, VHF radio and telephone communication.
- External Clock Input for synchronised UTC from a GPS receiver or other time references
- NMEA Module for recording serial data.
- Ethernet Hub for the recording of the radar videos and the transfer of the recorded data to the Final Recording Medium.

External Data Acquisition

Digital and analogue interfaces will be installed outside the Data Concentrator where they are needed. They are rail mounted and can be placed in an existing console or in a separate housing (Interface Extension Box).

Uninterruptible Power Supply

UPS for running the VDR for a period of 2 hours. The VDR will continue to record bridge audio and all other data still available to it. The UPS is monitored by the Data Management Unit and an alarm will be generated, if the UPS or the main power fails.

Final Recording Medium

The Final Recording Medium is a fire resistant and pressure tight storage medium to store the recorded data required by the IMO. The capsule is resistant against shock, penetration, fire, deep sea pressure and immersion. The data should be stored for at least 12 hours. On request SAM Electronics can provide a Final Recording Medium with an extended storage capacity for 24 hours recording time

The Final Recording Medium includes:

- Protected Memory Capsule with 1.7 GB flash memory for 12 hours recording time (optional 4 GB for 24 hours recording time).
- Mounting Unit

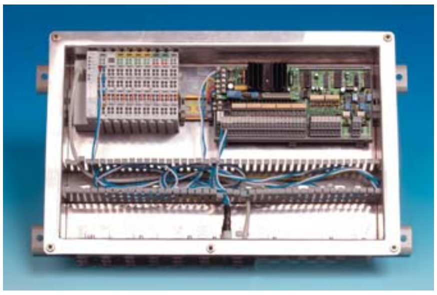
Operation

The operation is done via the Radarpilot 1000/1100. All connected Radarpilots will be able to display alarms and start the incident backup function. The incident backup function starts a download of the last 12 hours to secure the recorded data for a later use.

Replay Station

The Replay Station is an optional module to download and display the recorded data from the Data Concentrator via Ethernet. The software visualises the information graphically and alphanumerically in separate windows.

Final Recording Medium



Interface Extension Box

- Optionally the replay system can be presented on an electronic sea chart.
- Specific parts of the recorded data can be extracted and displayed for detailed examination.
- As an option an access via SATCOM can be provided to the VDR for remote maintenance.

Data Concentrator

Scope of Supply

Standard Configuration

- Data Concentrator consisting of:
  1 x Industrial PC incl. internal hard disk for 12 hrs recording time.
  1 x Removable harddisk
  1 x Radar interface via Ethernet
  8 x Serial (RS422) inputs
  4 x Analogue inputs*
  32 x Digital inputs*
  1 x Ethernet Hub
  1 x Audio module with 6 microphones (6 internal or 2 external and 4 internal) and 1VHF input
- USV
  1 x 1000 VA Uninterruptible Power Supply
- Replay Station software consisting of:
  1 x Replay Software License which requires a Pentium based multimedia PC with Windows NT 4.0 or higher
- Final Recording Medium
  1 x Diving Capsule with 1,7 GByte flash memory
- Options:
  - Extension for 24 hrs recording time
  - Recording of up to 2 additional radar displays
  - Analogue Converter to generate a serial data telegram
  - Digital Converter to generate a serial data telegram
  - Extended storrage capacity for the Final Recording Medium
  - Online access via SATCOM
  - Replay Station PC

Important

Depending on the installed systems on board which are connected to the VDR the configuration has to be modified. Therefore all technical details e.g. data sources and data telegrams have to be known.

*placed outside the Data Concentrator

Planning Data

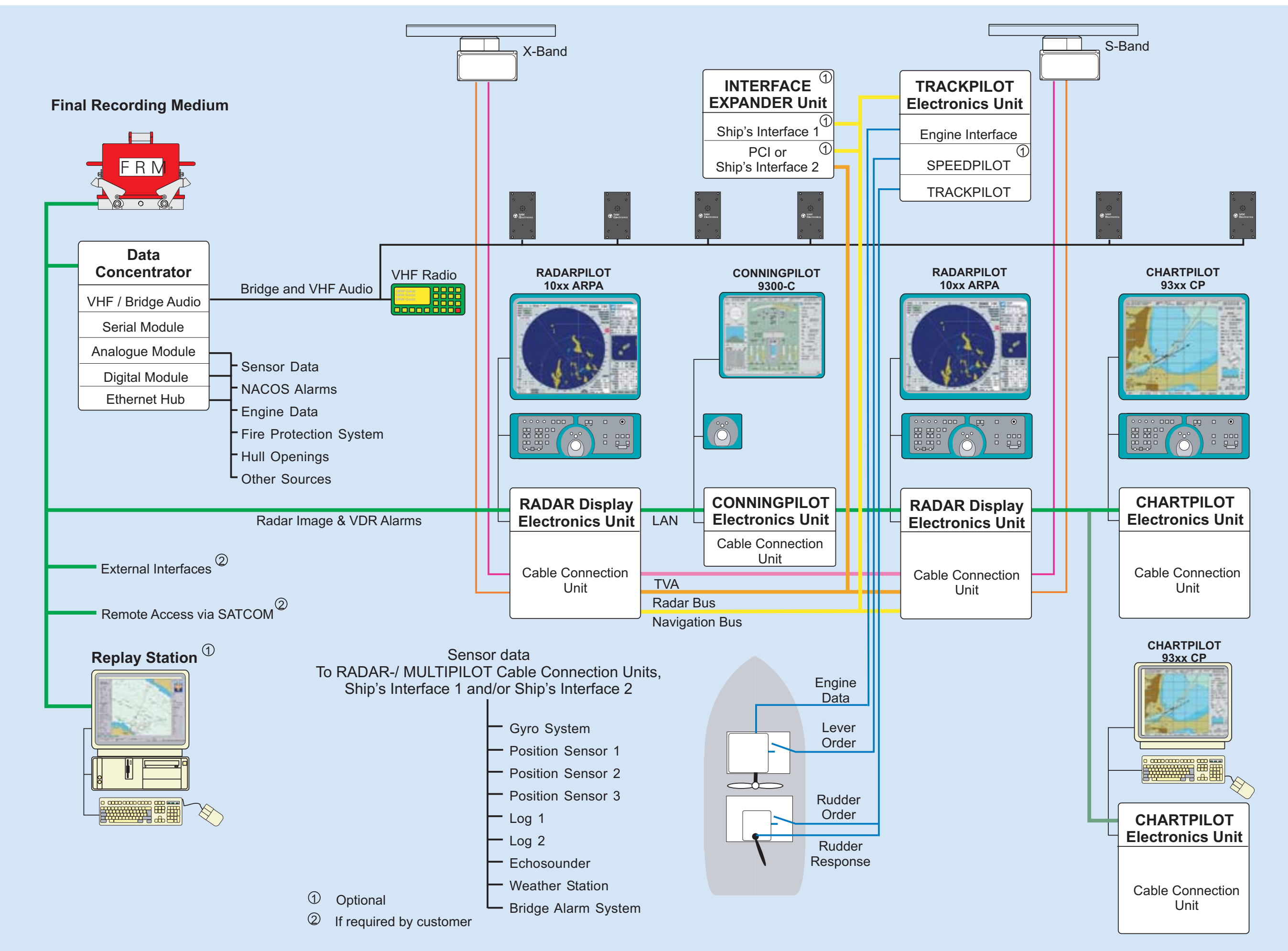
Before programming the software and delivering the system all technical details especially the connected subsystems, the number and type of the different interfaces and the data telegrams have to be clarified.

Quotations

Binding quotations can only be issued after at least the general planning data are available, such as the number and type of sensors to be interfaced and the format of the used data telegrams. As long as these data are not available please use the VDR DEBEG 4300 standard configuration for a budgetary quotation.

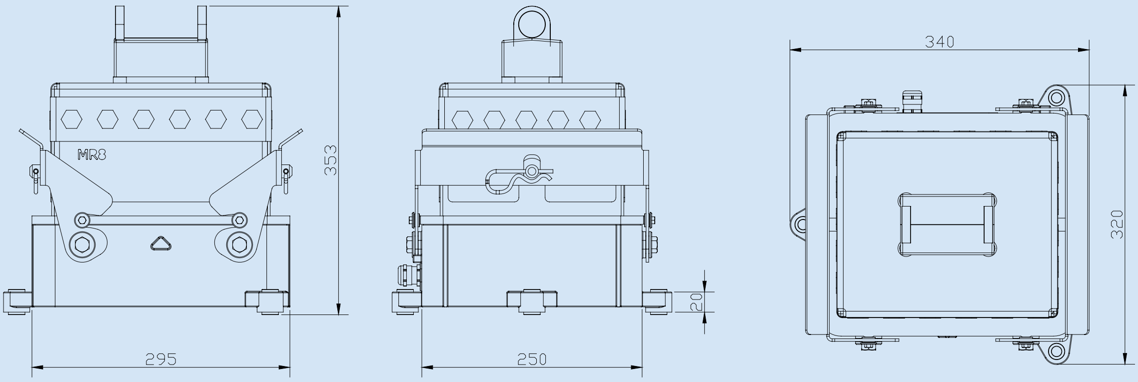
Delivery Time

The delivery time of the system will be typically 90 days after clarification of all technical details.



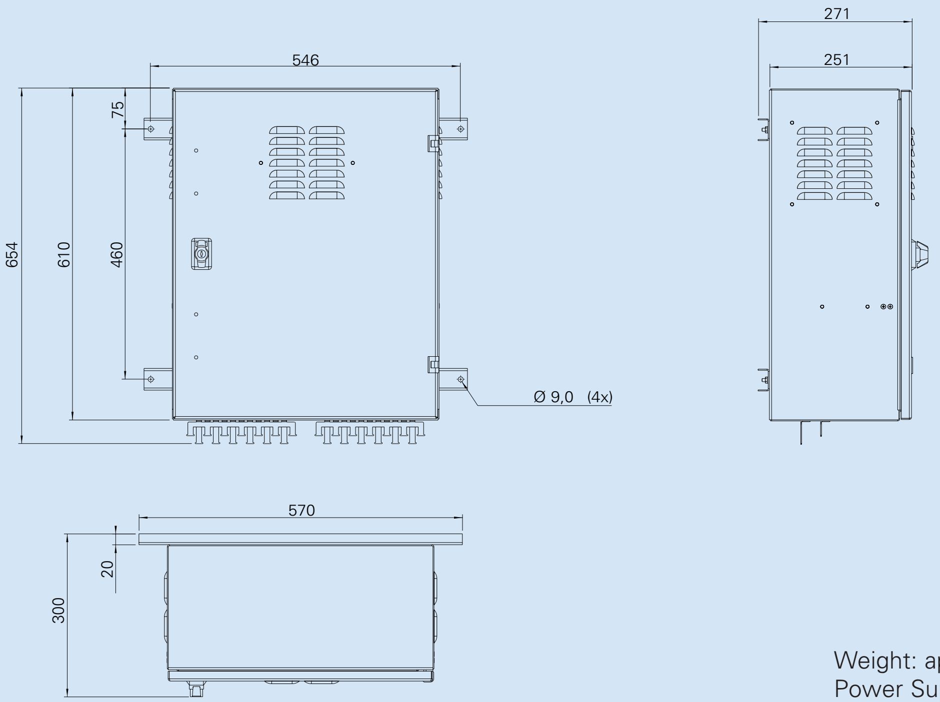
Scope of Supply

Final Recording Medium



Weight: 18,5 kg
Power Supply: 24 V DC

VDR Data Concentrator



Weight: appr. 40 kg
Power Supply: 110/230 V AC

For more information about S-VDR please visit our website or contact us directly.

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