

# SAILOR UAIS1800 AND SAILOR KDU1805

Situational awareness

## UAIS – UNIVERSAL AUTOMATIC IDENTIFICATION SYSTEM

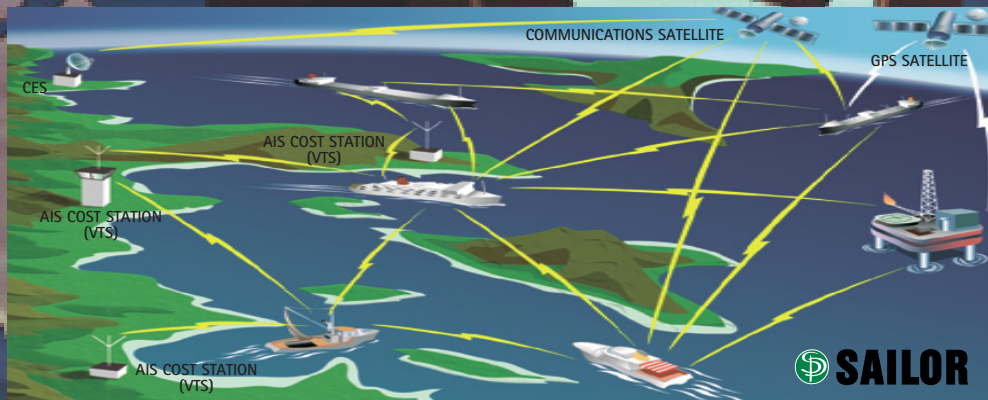


**SAILOR**

When safety counts



# SAILOR UAIS1800



## AIS – A SAFETY STANDARD FOR TOMORROW'S WORLD

The International Maritime Organisation (IMO) has introduced new requirements for safety equipment on board: according to Resolution MSC.74(69), Annex 3, all SOLAS vessels are to install AIS transponders between the years 2002 and 2004 according to pre-defined deadlines for different categories of ships (see page 4).

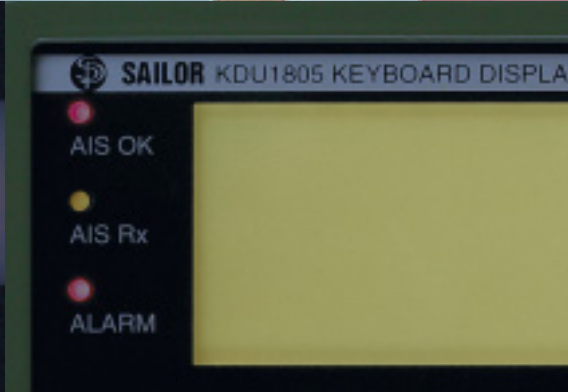
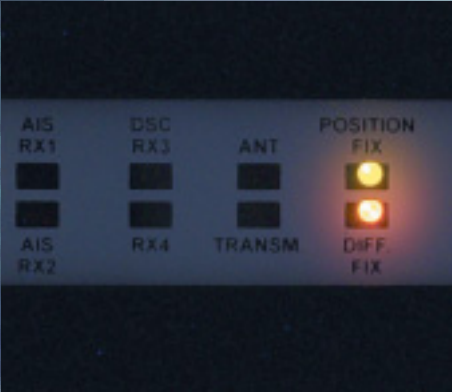
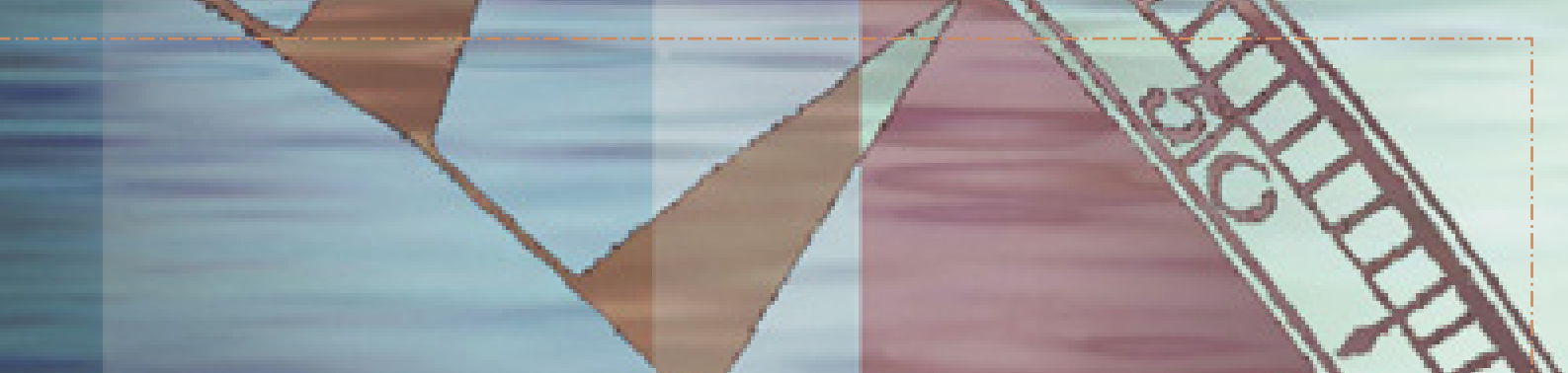
### Increased safety at sea

Seamen all over the world are concerned with the matter of safety. They want to be able to navigate safely in all types of waters – narrow passages as well as open seas. To be able to do this, they must study their intended routes carefully and be prepared for anything. AIS is the best way to be as prepared as possible, and as we at SAILOR have always been particularly interested in safety, we are one of the leading developers and manufacturers of this excellent type of equipment for navigational communications. AIS is set to take the concept of safety on board to a whole new level.

### Seeing around corners

With AIS on board, you can receive safety-related navigational information on other ships or details of potential dangers ahead etc. Vessels equipped with AIS transponders can automatically exchange data about themselves and their respective routes. The transponder communicates on a VHF data link that enables the AIS to "see around corners". Thus, navigators will be warned of any dangers long before visual contact is established – and be able to take appropriate action in good time.

As such, AIS improves situational awareness on board all vessels, providing extensive information about traffic and navigation to help predict situations and thereby preventing delays and accidents.



## SAILOR UAIS1800

SAILOR UAIS1800 is a Class A shipborne transponder that fully complies with the SOLAS requirements. It is an advanced integrated system with a built-in 8-channel GPS for synchronisation purposes and back-up of the main GPS/D-GPS. It also features a VHF data link transmitter/receiver and a 24V DC switch mode power supply. To present the information, a Keyboard Display Unit (KDU) must be connected to the transponder. More sophisticated display systems can be connected – thus making the system more userfriendly for navigators.

The transponder has three VHF receivers and one VHF transmitter, which are tuned as standard to the assigned AIS channels – 87 and 88. In areas where other channels are used, the transponder's channel 70 DSC receiver automatically switches to the local AIS frequencies. The DSC message to switch channels is

broadcast by the local shore authorities.

SAILOR UAIS1800 is a complex system with extensive flexibility that allows the system to interface with other on-board systems.

### Display system interfaces

SAILOR UAIS1800 has two connectors for interfacing with display systems, making the transponder very flexible and easy to operate.

A display system is needed to visualise the information received from other transponders. As a minimum, the IMO requires that data from the three nearest ships in VHF range can be displayed on a monitor, and that the navigator on board is able to operate the transponder and make data available to colleagues aboard other vessels.

### Interfaces with navigational equipment

SAILOR UAIS1800 makes it possible to interface up to three different pieces of navigational equipment on

board by means of the dedicated sensor ports.

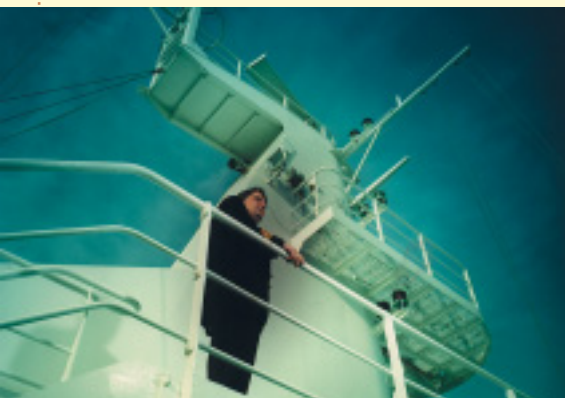
Sensor 1 is for input. It is the sensor to which an external GPS/D-GPS is normally connected. The ship's GPS/D-GPS is the main source of position information.

In case input from the external GPS/D-GPS equipment fails, the built-in GPS will automatically take over the transmission of the ship's position.

Sensors 2 and 3 are for input only. They are available for connection of additional instruments such as gyro compass, speed log and ROT sensors.

The information from these sources will be included in the transmission to AIS receivers, further enhancing the level of surveillance of traffic in the area.

Differential information can be fed to the DGNS port in order to obtain D-GPS position accuracy.



## SAILOR KDU1805 – KEYBOARD DISPLAY UNIT

KDU1805 is a natural complement to SAILOR UAIS1800 and to display systems with which UAIS1800 is interfaced.

SAILOR KDU1805 is designed to meet the need for a basic and easy-to-use Keyboard Display Unit. It fulfils the minimum IMO requirements and is an alternative to the various more advanced systems to which the UAIS1800 can also be connected.

KDU1805 requires little space but lives up to the level of user-friendliness for which SAILOR products are famous. The alphanumerical display features seven lines of data for presenting the name, range and bearing of the three closest ships. Additional information is available by scrolling or accessing sub-menus. KDU1805 is also used for manual input of messages concerning the voyage or safety and for operation of AIS and data selection. This text message functionality can be used to

send individual messages to other vessels, or, for example, to broadcast safety messages to all vessels within VHF range.

### Links to advanced display systems

The UAIS1800 transponder can display the received data on KDU1805 or on other more advanced systems such as ECS, ECDIS and ARPA radars. This allows UAIS1800 to exploit the advantages inherent in other systems. Interfacing with other advanced systems makes it possible to display ships as AIS icons on the ECS/ECDIS map or as targets on the ARPA radar. By clicking on the icon or target, more information about the vessel is made available.

A Windows-based graphic user interface is also available from SAILOR for operating AIS and

displaying navigation targets. This software is very easy to use, but has not been type approved for stand-alone operation and can therefore only be used in combination with the SAILOR KDU1805.

### Antenna

SAILOR UAIS1800 only requires connection to one VHF antenna and one GPS antenna. The transponder can receive both GPS and DBR (Differential Beacon Receiver) signals. However, reception of DBR signals requires the installation of an additional DBR module as well as a DBR or D-GPS antenna.

IMO Requirements apply for:	Deadline
All newbuildings constructed on or after	July 1, 2002
All passenger ships	July 1, 2003
Tankers of all sizes	July 1, 2003*
Vessels of 50,000 and greater gross tonnage	July 1, 2004
All other vessels covered by SOLAS	December 31, 2004

\*Not later than the first survey for safety equipment on or after July 1, 2003

Deadlines for installation of AIS transponders on board SOLAS vessels.

### Examples of data exchange

STATIC DATA	DYNAMIC DATA	VOYAGE-RELATED DATA
MMSI/IMO number	Position	Draught
Call sign/Name	UTC	Cargo/Hazard type
Length/Beam	Course	ETA/Destination
Type of ship	Speed	Number of passengers
GPS antenna location	Navigation status	
	Heading	
	Rate of turn	

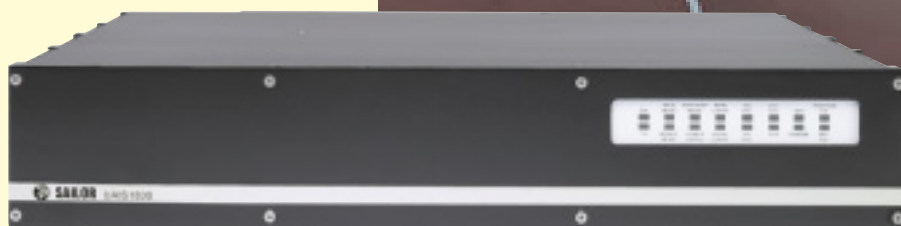
### Technical requirements on board

The AIS transponders are based on a VHF data link transceiver, a computer, and a built-in GPS interfaced with the navigational equipment on board. The transponder automatically transmits and receives the data to/from all AIS-equipped vessels within VHF range. The intention is to equip coastal stations with AIS as well to allow them to monitor the traffic in narrow and/or heavily trafficed waters. These Vessel Traffic Monitoring Stations help seafarers to navigate in difficult waters.

The technology used for these highly advanced automatic communications is called Self-Organised Time Division Multiple Access, SOTDMA. It uses the extremely accurate standard time references supplied via GPS signals to synchronise data transmission from multiple users – thus preventing interference and loss of information. GPS provides both the universal time reference and the positioning data for each ship.

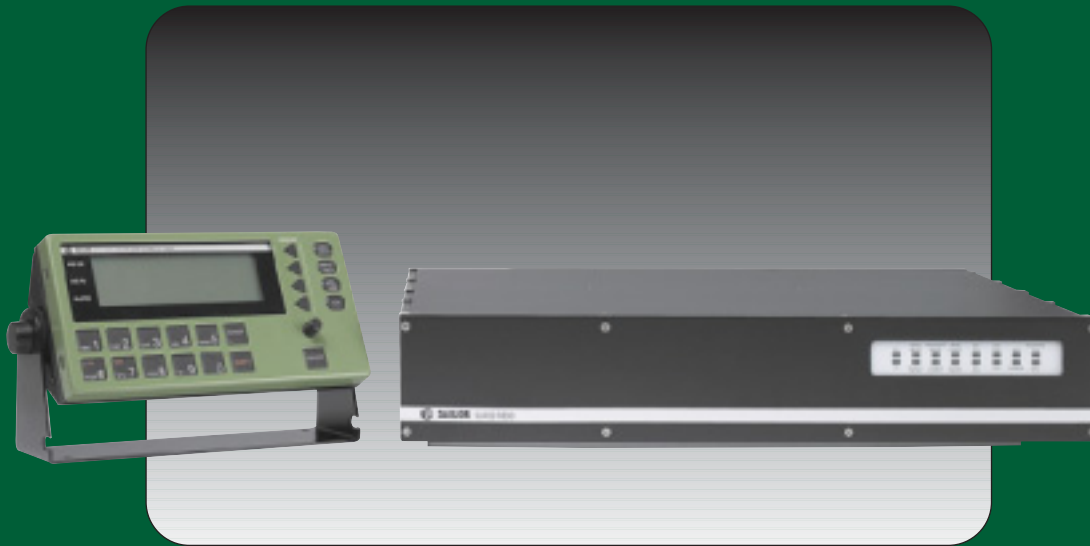
### In case of emergency

As a special feature, the transponders can also be used to transmit text messages between ships within VHF range, or from ship to shore and vice versa. This is particularly useful for broadcasting information on traffic, port conditions, pilots or safety matters.





## SAILOR UAIS1800 AND KDU1805



A FRIEND IN NEED IS A FRIEND INDEED, as the saying goes, and SAILOR is truly committed to being there for you should a problem arise. What is more, we want to make sure that you are always on safe ground, even when you are on the open sea. That is why we operate under the maxim: "SAILOR – When safety counts".

With more than 50 years of experi-

ence in the market, SAILOR is a true professional. We know that we have to earn the loyalty of our customers. That is why nearly 15% of our annual turnover is reinvested in research and development, and why more than one employee in ten is engaged in finding solutions to the challenges of tomorrow.

Today, SAILOR provides a well-known range of communications products that

includes everything from radios for the leisure market to equipment for fishing vessels and complete communications solutions for the deep sea sector. The SAILOR brand has become synonymous with reliable and technologically superior radio equipment – and covers everything from basic VHF units to state-of-the-art satellite systems, AIS (Automatic Identification System) and complete compact GMDSS solutions.



# SAILOR

When safety counts

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