



KanAtoN AIS AtoN Transponder

The KanAtoN AIS transponder is an Aid to Navigation station, optimised for installation on floating or fixed Aids to Navigation.



KanAtoN e-Navigation Solutions

Maritime and river Aid to Navigation

Used for maritime marking, KanAtoN is an advance navigation aid which enables:

- Radar/ECDIS screens on boats to obtain reliable AtoN identification data in any weather conditions.
- Navigators and authorities to obtain complete AtoN identification data (MMSI, Position, etc.)
- AtoN status monitoring (light status, etc.)
- Real time warnings when buoys move off position
- AtoN collision risk reduction
- Virtual and synthetic Aids to Navigation

Environmental protection

Equipped with a built-in communication capability, the KanAtoN transponders are used on coastal or sea structures. Their sensors, enable the processing and saving of meteorological and hydrological data, providing scientists and authorities precious environmental data.

Offshore structure marking and collision prevention

The KanAtoN transponder enables offshore structures (instrumented buoys, wind and wave energy farms, oil and gas platforms, offshore docks, pipelines, etc.) to be marked, improving navigational safety and collision prevention.

Navigation study and analysis tool

The KanAtoN transponder can be a navigation study and analysis tool due to the information obtained.

- Analysis of the impact of ships on the environment.
- Study of a lateral distribution of ships navigating through a crossing area in the different waterway situations
- Study of ships behaviour in waterways according to the speed of the ship
- Determination of the effectiveness of lengths and widths of crossing areas in waterways
- Optimisation of the traffic in the entrances to ports and waterways

Economic optimisation

The KanAtoN transponder can also be a highly valuable aid for the economic optimisation of certain routes:

- Monitoring of ships passing through waterways in order to collect fees
- Reduction of movement in an area (maintenance)

Member of IALA



Main Features

- Type 1 (FATDMA): Transmitter in the 160MHz band: configured according to the frequency dedicated locally to AtoN
- Type 3 (RATDMA): Transmitter-receiver: completely autonomous; without intervention, it can select the time slot in which it will transmit

KanAtoN enables sending of the following messages:

Message 21: Identification of the Aid to Navigation

- MMSI identification
- Type
- Name
- Position
- Longitude, latitude
- Dimension
- OFF position indicator (off-position buoy)
- Status, etc.
- Signalling light on off indicators

Features

- Transmits messages 21, 8, 6 (7, 12, 13, 25 type 3 only)
- Very low power consumption, compatible with solar-powered installations. Transmission period of 3 minutes on the 2 channels:
 - Type 1: < 0.2 Ah/day (FATDMA protocol)
 - Type 3: < 1 Ah/day (RATDMA protocol)
- Automatic switch off of the RACON when the buoy moves off position
- Transmission of message 6 (status message: battery charge, lights, solar panel) for tele-monitoring requirements

Message 8: Meteorological and hydrological messages

KanAtoN allows meteorological and hydrological messages to be transmitted, they can be configured according to the user's needs. These messages are received by the RS422 link according to a NMEA standard protocol.

Message 6 : Tele-monitoring of the AtoN

The message enables binary technical information, in accordance with programming tailored to the user's needs, to be sent from the AtoN.

It is possible to programme up to 4 virtual or synthetic ATONs

Type 3 only:

Message 12: relaying of safety messages transmitted by a SART

BSH certification.

- Transmission of message 8 enabling a network of sensors to be deployed to measure the meteorological and hydrological parameters along the coast
- Adapts to the main meteorological and hydrological sensors
- Transmission of an AIS message when a ship is approaching (the ship's AIS transmission is perceived by type 3 AtoN which then switches on)
- Reception and relaying of configuration messages for itself or for other AtoNs forming a transmission chain



Features

- Relays safety messages (SART message)
- It is possible to transmit the AtoN's data over long distances due to the satellite link integrated into the type 3 transponder (option)
- It is possible to set type 3 KanAtoN to redundant configuration in order to deal with breakdowns:
- It is possible to programme 4 virtual or synthetic AtoNs
- Very low power consumption
- Compact, lightweight casing (1 kg) which facilitates installation (the GPS antenna is built into the casing)
- Watertight casing
- Easy to configure using a PC on a series or USB port
- Powerful amp in a compact size
- Inputs protected against overvoltage

Complies with standards:

IEC 62320-2, UN 60945, ITU-R M1371, IALA A-126

Technical specifications

Operating temperature: -20 to +60° C
Polarity inversion protection: Yes
Operating voltage: 10 to 36 V
Operating current: <1 mA in sleep
<50 mA in operation
<2.5 A in transmission

Consumption
(message 21 every 3 min) type 1: <0.20AH / day
(message 21 every 3 min) type 3: <1AH/day
GPS receiver: GPS L1 C/A-code,
SPS 12 channels
Acquisition time: - Cold start: 36 s
- Hot start: 4 s

Sensitivity:
- In acquisition (cold): -141 dBm
- In acquisition (hot, warm) -149 dBm
- In tracking: -156 dBm

Supports WAAS/EGNOS

VHF antenna connector: N female

Power connector /input output: Amphenol C16-1

AIS frequency: AIS1 161.975 MHz
AIS2 162.025 MHz

Power: 2W or 12,5 W

Transmission mode: FATDMA (RATDMA)

Inputs/outputs:
4 inputs insulated by optocouplers (to read data relating to light faults, lights on and Racon fault information)

Characteristics:
- Insulation voltage 5300Vrms
- Protection voltage 16V 600W for 1 ms
- Operating voltage 16V to 3,3V

1 output per solid-state relay (for Racon disable remote control)

Characteristics:
- Insulation voltage 5300Vrms
- Max current 200mA at max 16Vx
- Ron resistance < 150 Ohms

Communication ports:
- TX and RX in RS232 for configuration and reception of technical data
- RX in RS422 for reception of meteorological data

Power on indicator:
- By tri-colour led (green/yellow/red)

Dimensions: diameter 165 mm – height 135 mm

Weight: 1.1 kg

Casing material: ASA plastic

Casing colour: white

Sealing: IP67

Accessories:
- 1 VHF antenna
- 2 x 7 strand shielded cables fitted with Amphenol C16-1 connector, length 5 m
- 1 RG213 coaxial cable fitted with an N male connector, length 5 m



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Service & Support

For service and support, please visit
<http://www.mcmurdomarine.com/navigation-infrastructure>
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