

AIS AQ610



KONGSBERG



Photo: Kristian Topp

Automatic Identification System - maritime operations base station

The AIS AQ610 is based upon the new generation AIS Base Station range from Kongsberg. It is designed in accordance with all relevant international standards including IEC 62320-1/-2 and ITU M-1371-5. It has a sensitivity better than -115 dBm and a 1U 19" rack mountable smooth design.

The Kongsberg AIS AQ610 is specially designed for use in offshore maritime operations, such as wind energy and aquaculture farms. The AIS AQ610 receives and communicates AIS data from all AIS sources: AIS mobile stations, AIS base stations, AIS Aids to Navigation units, Search and Rescue (AIS SAR) units, and Man-over-Board (AIS MOB) units within the VHF coverage area. The AIS system has proven to be a valuable tool in increasing the situation awareness and the efficiency of operations and safety.

Special functions

- Electronic AIS marking of real position of infrastructure, and virtual marking of the outer perimeter of the operational area. All vessels equipped with AIS will receive information indicating the area of operation of the aquaculture location.
- Integration with meteorological sensors for local distribution of weather data.
- Local vessel AIS monitoring in order to track own work boats within the location as well as vessels entering/leaving the area of operation.
- Remote monitoring of vessel activity from the main control centre for logistic purposes.

Remote configuration and operation

The AIS AQ610 has an Ethernet/LAN interface, making it easy to interface the unit to other equipment or data networks. From the AIS Central Monitor Application, a single AIS AQ610, or a network of these, can be remotely operated and maintained. The AIS AQ610 supports configuration and firmware update via a web interface.

Sensitivity

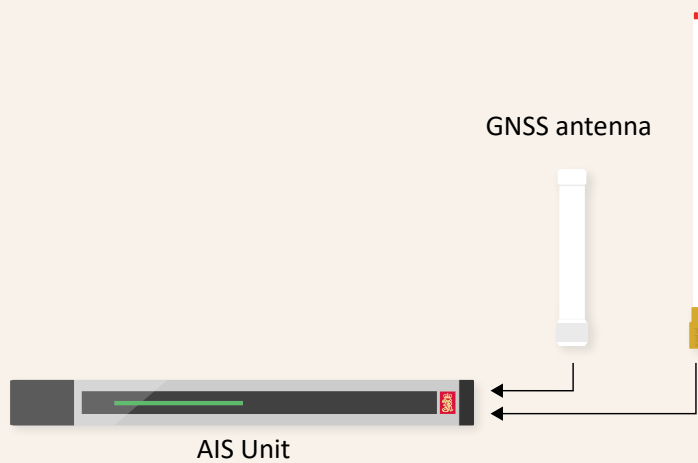
Kongsberg Discovery has been developing satellite based AIS receivers since 2010 and this space-based AIS technology has strong focus on receiver sensitivity. The high sensitivity has been incorporated in the AIS AQ610. The increased sensitivity exceeds the requirements in international standards and regulations, and is an incredible enhancement in terms of signal reception, greatly increasing the offered base station range.

Hot standby

In order to obtain a very high level of service and availability, a redundant base station configuration can be established. Two AIS AQ610 units will operate autonomously in such a configuration when connecting them with a 0-modem cable and enabling the redundancy functionality. The redundancy communication can also take place over LAN. In that case, the serial cable is not needed. In case of an automatic change in redundancy status, the control centre will be notified.

FEATURES

- Sensitivity better than -115 dBm
- SNMP v.2
- WEB interface for remote configuration and software update
- Three remotely configurable receivers (TDMA/DSC)
- USB interface for firmware update
- Transmission of up to 20 virtual AtoN, implementation of a subset of IEC 62320-2 functionality
- Serial interface, data (RS-232)
- Optional combined 100 to 240 V AC and 24 V DC version
- Supporting NTP as client and server
- Interface to meteorological sensors (option)
- Own position message (synthetic VDO) for map presentation
- Redundancy support



Technical specifications

AIS AQ610

Interfaces

Communication ports	Service and redundancy, RS-232
Message formats	NMEA
LAN	100 Mbps BaseT Ethernet

Radio module

VHF transmitter	12.5 W or 1 W (remotely switchable)
VHF antenna N-connector	50 ohm
GNSS antenna TNC-connector	50 ohm
Sensitivity	Better than -115 dBm
Bandwidth	25 kHz
Frequencies	156.025 - 162.025 MHz
	Default Ch. 87B (161.975 MHz)
	Default Ch. 88B (162.025 MHz)
Protocol	FATDMA, RATDMA

GNSS module

GNSS receivers	72 channels, GPS, GLONASS, Galileo, BeiDou
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Weights and dimensions

Dimensions	44 mm x 485 mm x 345 mm
Weight	3.0 kg, 24 VDC option 3.3 kg
GPS antenna	0.15 kg, 230 mm x 33 mm
VHF antenna	1.0 kg, 1250 mm

Power specifications

Input voltage	100 - 240 VAC (50 - 60 Hz) Optional combined 100 - 240 VAC and 24 VDC
Power consumption	9 W average
GPS antenna	5 VDC from AIS Unit

Environmental specifications

Operating temperature range

AIS AQ10 Units	-15 - +55 °C
GPS antenna	-50 - +70 °C
VHF antenna	-55 - +70 °C

Humidity

AIS AQ610 Units	< 95 % relative, non-condensing
GPS antenna	100 %, hermetically sealed
VHF antenna	100 %, hermetically sealed

Standards and regulations

Environmental	IEC/EN 60945-1:2002 (HW platform)
Electrical safety	IEC/EN 61010-1:2010
Electromagnetic compatibility	IEC/EN 60945:2002 ETSI/EN 301 489-1 (V1.8.1) ETSI/EN 301 489-5 (V1.3.1)
Electrical interface	IEC 61162-1:2010/IEC 61162-2:1998
IALA recommendation	A-124
Base station operation	IEC 62320-1:2015 (where relevant) IEC 62320-2:2016 (ex. clause 4.6) IMO MSC.74 (69) Annex 3
Radio	IEC 62320-1:2009 ITU-R M. 1371-5
MTBF (hours)	>100.000 (designed to meet)

Specifications subject to change without any further notice.