



AIS

Vega AIS Type 1 & Type 3

Automatic Identification System

Vega has designed two types of AIS units specifically for the aids to navigation industry.

Vega AIS units enhance a beacon's capability by allowing the beacon to broadcast its position and status to either oncoming vessels or land based AIS receivers.

They are more efficient, more flexible and easier to set up than comparable systems, making it the ideal AIS system for your needs.



BSH approved (BSH/4542/002/4322515/15)

BSH approved (BSH/4542/002/4322971/15)

OUTSTANDING FUNCTIONALITY AND FEATURES

Following the success of other monitoring solutions such as Vega's GSM and satellite monitoring, Vega has designed AIS systems specifically for marine beacons. Vega's AIS systems are configurable to meet the varied needs of clients.

Vega AIS units enable a beacon to broadcast its position and status to vessel or land-based AIS receivers. The units can also broadcast up to 3 additional virtual beacons, providing information to identify hazard positions where it is not possible to place a physical beacon. This allows hazards to be seen on AIS displays even when there is no physical marker.

The Vega AIS unit can also be used to monitor the performance of a beacon. For enhanced monitoring, the AIS unit can be combined with the VegaWeb monitoring and control platform.

Vega offers two types of AIS units to meet your requirements. Vega AIS Type 1 offers lower power consumption consuming as little as 0.2Ah/day at 12V. This efficiency allows it to be powered by more compact solar/battery options.

Vega AIS Type 3 offers additional benefits such as collision detection reporting, proximity control and it can be used in remote locations without the need of a base station. Contact Vega or an authorized Vega channel partner for the AIS energy calculator or to determine which AIS solution best fits your application.

The optional high gain stubby antenna provides dual benefits of great protection from waves on exposed buoys and excellent RF gain.

COMPATIBILITY

Vega AIS units can be used directly with beacons equipped with a Vega data port (see vega.co.nz for current list of models). Other beacons equipped with a DC power cable are compatible with Vega AIS with the addition of the optional current sensor unit.

FEATURES

	Type 1	Type 3
Receives	×	✓
Transmit	✓	✓
FATDMA	✓	✓
RATDMA	×	✓
SART relaying	×	✓
Messages 6, 8, 21	✓	✓
Meteo and Hydro output	Optional	Optional
Collision detection	×	✓
Proximity control	×	✓
GPS sync	✓	✓

Visit www.vega.co.nz/ais for a full list of AIS terms and definitions.

BROADCAST MESSAGES

The Vega AIS units can broadcast all of the required messages for your AIS navigation solution.

Message 21 is the most important AIS message for navigational aids. It is an internationally standardised message and includes basic yet critical information about a navigational aid or beacon. The message contains information such as the name, health status, GPS position, and on/off status of the beacon.

Messages 6 and 8 can be configured to transmit monitoring information. The information can be sent in a proprietary Vega format (for VegaWeb monitoring) or in the IALA-126 recommended format. Combined with a land-based receiver, these messages allow more advanced monitoring of the beacon than can be done with Message 21.

Message 8 can also be used to transmit meteorological information when a weather station is fitted to the navigational aid.

POWER CONSUMPTION EXAMPLE

Power consumption examples (12V) with 3min transmit interval Msg 21

	Vega AIS Type	Vega AIS Type 3		
TDMA Mode	FATDMA	FATDMA	RATDMA	RATDMA
Power mode	Standard	Standard	Low	Normal
Energy requirement	0.2Ah/day	0.33Ah/day	1.35Ah/day	3.4Ah/day



SPECIFICATIONS

RADIO SPECIFICATION

TDMA Control Type 1	FATDMA
TDMA Control Type 3	RATDMA and FATDMA
Transmission Period	Configurable.
Frequencies	161.975MHz and 162.025MHz (other frequencies user-selectable)
VHF Power	2 or 12.5Watt (user-selectable)

CONNECTIVITY

Data Ports	RS-232 Smart beacon port with Standard Model; additional RS-232/422/485 ports optional
Accelerometer	3 axis, adjustable to 8G
Antenna connectors	IP68 sealed

ELECTRICAL PERFORMANCE

Indicators	Status (green/red)
Voltage	10 to 36VDC; automatic source selection
Over voltage protection	40V on all connections
Typical Energy Required	See Power Consumption Example
Current	Sleep mode 1mA/ operating mode 50mA/ transmitting 0.5 A (12.5W)/ GPS operation 25mA at 13.5V and 15mA at 24V

ENVIRONMENTAL

Temperature	-30° to +60° Celsius
Intrusion Protection	IP68 to EN60529
Ultraviolet Protection	ASA (UV Stabilised Nylon)
Vibration	Vertical 7m/s ² 2Hz to 13.2Hz; Horizontal 7m/s ² 13.2Hz to 100Hz; sweep at 0.5 octave/min

ENCLOSURE

Weight and Dimensions	Refer drawings on the back page
Mounting	3 or 4 holes, 200mm PCD or rail mounting. Anti compression sleeves in mounting holes (designed for easy mounting under beacon)
Material	Strengthened nylon 6/6
Access	Fully sealed with no user serviceable parts

STANDARDS

Vega Type 1 & 3 : CE 0168, Australian & NZ registration, Type 1 FCC Authorisation 2AEYIVAIS1.

AIS Conformance: IEC 61162-1, IEC 62320-2 ITU-R. M.1371.4, IALA Recommendation A-126. Conformity statement issued by BSH R&TTE. CE0168.

Intrusion: IP68 to EN60529.

Immersion: MIL-STD-20G Method 104A Cond B.

Vibration: EN662320-2 referencing EN60945.7

RF Tx: Output Power: 33-41dBm; Ramp <500us
Tx shutdown channel protection 300ms.

RF Tx Spurious Emissions: EN62320-2: -36dBm to 1GHz, -30dBm to 4GHz.

RF Rx Spurious Emissions: EN62320-2: -57dBm to 1GHz, -47dBm to 4GHz.

Radiated & Conducted Emissions: EN60945.

Electrostatic Discharge: EN61000-4-2: 2002 6kV contact, 8kV air.

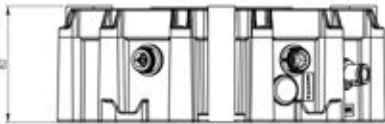
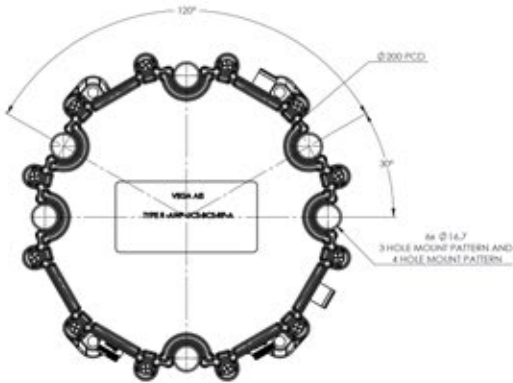
Fast Transient Immunity: EN61000-4-4: Level 3 as per EN60945: 1kV common mode.

Radiated Immunity: EN61000-4-3: 2002 Class 1 Level 3 as per EN60945: 10V/m 80MHz to 2GHz.

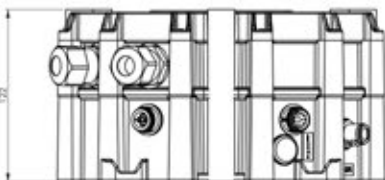
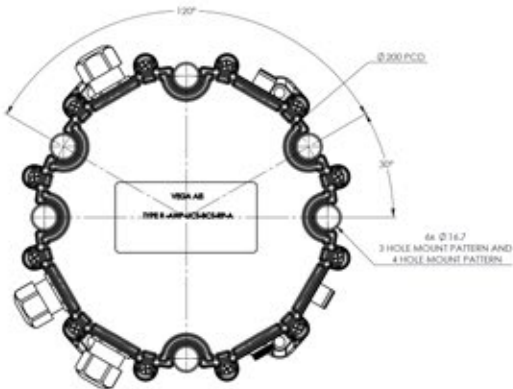
Conducted Immunity: EN61000-4-6 as per EN60945: 3Vrms sweep at Level 2 and 10Vrms spot test.

Surge Immunity: EN61000-4-5: 1995 Class 3 Level 2 0.5kV lead to lead.

DIMENSIONS & WEIGHTS



Standard size Vega AIS Unit



Vega AIS Unit unit with current sensor

PARTS FOR ORDERING

DESCRIPTION

VegaAIS Type 1 or VegaAIS Type 3

PARTS FOR ORDERING

Product Code Format

VAIS-#-V-O

Where # is

1 = VegaAIS Type 1

3 = VegaAIS Type 3

Where V is

S = Standard I/O

E = Extended I/O

Where O is

SEN = Current sensor

Blank = Current sensor not required

OPTIONAL EXTRAS

GPS antenna

VAIS-GPSANT

VHF antenna

VAIS-VHFANT

NOTE: Refer to our website (www.vega.co.nz) if you require additional components or parts.



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