



**Transceiver**



**Sensor Interface (Optional)**

## FEATURES

Chronos is an internationally certified Type 1 and Type 3 AIS AtoN with the world's lowest power consumption. Offering a full range of features, including transmission of virtual AtoN targets, over the air configuration and chaining. Chronos can be interfaced directly with lights and RACONS, and to an extensive range of sensors when connected to the Chronos Sensor Interface product (optional).

The small, tough enclosure is designed for continuous, long term use in even the most extreme environments from the equator to the poles and can be installed in the tight spaces.

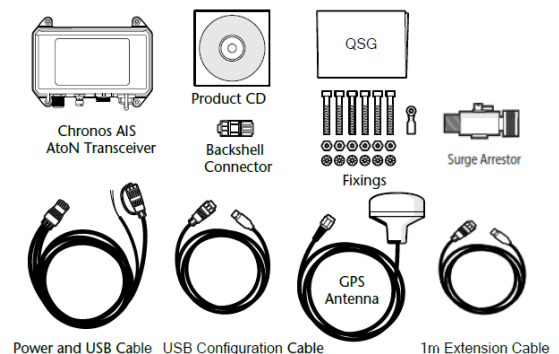
- International Certified Type 1 and Type 3
- Proven operational reliability
- Ultra low power consumption in all operating modes
- Small size for installation in the tightest space
- Designed and manufactured for the toughest of environments
- Multiple flexible sensor interfaces, when combined with the Chronos Sensor Interface (optional)
- Virtual/Synthetic AtoN support – up to 10 units
- Remote configuration (over the air) support

## CERTIFICATION

This product is fully tested and certified to the relevant international standards and product specifications (FCC (USA), Industry Canada and R&TTE (CE) Type Approval).

## SUPPLIED WITH (in the box)

- Chronos AIS AtoN Transceiver
- Product CD
- Warranty card
- Backshell connector
- Fixings
- Power and USB cable
- USB configuration cable
- GPS antenna (10m RG58 cable)



## SPECIFICATIONS

### AtoN Functions

- Type 1 and Type 3 options available
- Supports configuration by VDL command
- Chaining option available
- Customisable sensor interfacing
- Virtual/Synthetic AtoN support – up to 10 units

### Physical

- Dimensions: 172mm x 120mm x 55mm
- Weight: 350g

### Electrical

- 12 to 24VDC. Peak current at 12V is 3A. Peak current at 24V is 1.5A.
- Power consumption: Type 1 AtoN (FATDMA) less than 0.09Ah/day\*
- Power consumption: Type 3 AtoN (RATDMA) less than 0.8 Ah/day\*
- \* with 3 minute position reporting rate

### VHF Transceiver

- Transmitter: x 1
- Transmitter Frequency Accuracy: <  $\pm 500$ Hz
- Receiver : x 2
- Frequency: 156.025 to 162.025MHz in 25KHz steps
- Output power: 1W, 2W, 5W or 12.5W
- Channel bandwidth: 25KHz
- Channel step: 25KHz
- Modulation modes: 25KHz GMSK (AIS, transmit and receive)
- Bit rate: 9600 b/s (GMSK)
- Receiver sensitivity: < -110dBm @ 20% PER
- Adjacent channel: selectivity 70dB

### GPS Receiver and Antenna

- Channels: 50
- IEC 61108-1: Compliant
- GPS antenna: Internal or external options
- Spurious response rejection: 70dB
- Glonass: Option available

### Environmental

- Waterproof: IPx6 and IPx7 rated for water ingress
- IEC 60945: 'Exposed' category
- Operating temperature: -25°C to +55°C
- Relative humidity: up to 93%

### Standards – Design Criteria

- ITU-R M.1371-4 Universal AIS Technical Characteristics
- IEC61162-1/2 Edn. 2.0 - Digital Interfaces
- IEC61108-1 - GPS receiver equipment
- EC62320-2 Edition 1 - AIS Aids to Navigation
- IEC60945 Edition 4 – Environmental
- Safety: EN60950-1 2006, +A11 2009, +A1 2010, +A12 2011

### Interfaces

- USB (for configuration)
- Link connector - has two functions, only one can be used at any time:
  - connect to a Light, RACON and an external NMEA0183 port
  - connect to the Sensor Interface via the Link cable supplied with the Sensor Interface

## OTHER PRODUCT



Specifications and features may change without prior notice.