

MORIAH

Digital Wind System

About AGI

AGI is backed by over 30 years of experience in the design, development, manufacture and installation of ship borne systems and provides full Integrated Logistic Support services, training, installation and documentation.

AGI is accredited to International Quality Standards ISO 9001/BSS750 Part I and Tick-IT software procedures.



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Instruments Ltd**

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- Precise Wind Speed & Direction Measurement
- Naval Aviation & Weapon System Support Features
- Dynamic HELO Envelope / Operational Limit Capability
- Built-in Meteorological Capability
- Developed for very low Life Cycle Support Costs



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MORIAH

The US Navy's New Digital Wind System

with optional Meteorological Capability

Modern COTS equipment qualified to naval military standards, the digital Moriah Wind System (MWS) has been developed to replace the Type F Windbird Sensors, Data Distribution equipment and Displays on all classes of US naval ships, enabling accurate wind information to be displayed in the same format throughout the fleet.

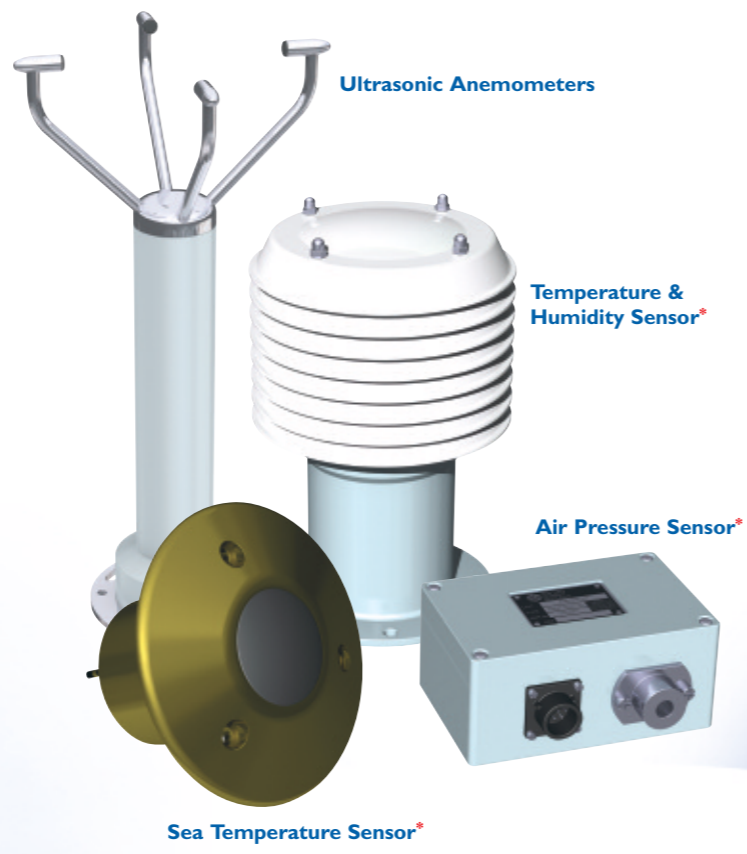
MWS is a solid-state system with no moving parts, so providing a highly accurate, reliable and low cost of ownership system for supporting ship based aviation activities. The system comprises 1 to 5 Solid-State Wind Sensors, Dual Redundant Processor Unit, a range of Multi-Function Color Displays (8.4", 10.4" and 15.0") and utility Software / Graphic User Interfaces. In addition, full Meteorological capability can be achieved with the inclusion of Air Temperature & Humidity, Air Pressure and Sea Temperature Sensors.

The MWS is based on AGI's AGIMET Naval Wind Measurement and Meteorological System, which is proven and in service with many navies worldwide. The MWS has been expanded to provide greater capability for data distribution, alleviating the need for dedicated re-transmission units. The design is highly modular and has spare capacity for plug-in RS422 modules, LAN modules, Synchro modules, together with spare memory and processor power, which allows for future system expansion, upgrades and refit.

The MWS Processor Unit is a stand alone Data Distribution System with multiple input / output capability. It can be bulkhead or deck mounted and contains two Sub-Processors, operating in a dual redundant configuration to avoid system downtime. Built-In-Test facilities are included, using an external PC and Graphic User Interface for detailed reporting of faults and system set up.

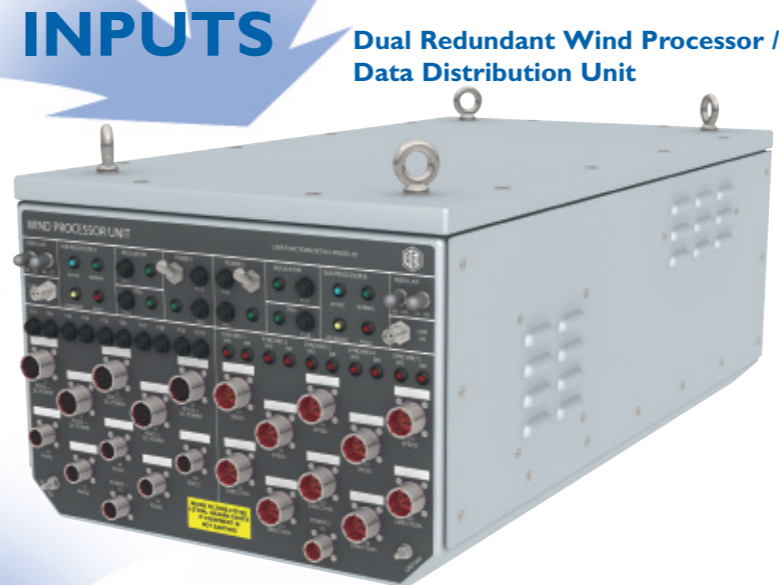
The Processor unit provides sensor interface and data distribution to other ship's systems and/or AGI's range of Multi-Function Color Displays. These TFT Liquid Crystal Display instruments provide high-resolution color displays, suitable for complex graphics data and feature multiple pages on a single instrument. Data pages include, but are not limited to, True & Relative Wind Speed and Direction, Meteorological and Oceanographic data, Deck Crosswind, Headwind and Tailwind, Ship's Speed and Heading, Ship's Roll and Pitch, Launch and Recovery Envelope data, Recovery Only Bulletin data, Fox Corpen data, BRC data and MWS Status Indication. The instruments offer excellent viewing angle properties and with fully dimmable back lighting, ensure maximum readability in a variety of ambient conditions, from direct sun light to the subdued environment of the Operations Room.

Military Standards
 Environmental
 MIL-STD-810E
 Shock
 MIL-STD-901 Grade A
 Vibration
 MIL-STD-167 + 810E
 EMC
 MIL-STD-461E



Graphic User Interface (GUI) - System Set-up & Diagnostic Tool

- INPUTS**
- Ship's Speed & Heading
 - Ship's Roll, Pitch & Heave
 - Ship's Propeller Pitch & RPM
 - Ship's Rudder Angle
 - Data Highway Interfaces (e.g. ADMACS, ICAN, FODMS)
 - Custom Data
 - RS422 Inputs up to 10 Channels
 - Single / Dual Ethernet Ports
 - Fiber Optic - 100BaseFX
 - RJ45 - 100BaseTX
 - Co-axial - 10Base2



Dual Redundant Wind Processor / Data Distribution Unit

- OUTPUTS**
- Navigation Systems
 - Weapons Systems
 - Flight Operations
 - Decoy Systems
 - Command Information
 - Data Highway Interfaces (e.g. ADMACS, ICAN, FODMS)
 - RS422 Outputs up to 10 Channels
 - Single / Dual Ethernet Ports
 - Fiber Optic - 100BaseFX
 - RJ45 - 100BaseTX
 - Co-axial - 10Base2
 - Synchro 10 Channels 60/400Hz



Showing True & Relative Wind Speed & Direction Data

Showing True & Relative Wind Speed, Direction / Flight Launch & Recovery Envelope Data

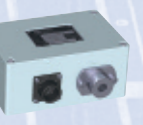
Ultrasonic Anemometers
Wind Speed
 Range: 0-125 kts
 Accuracy: 0-50 kts ±1.5kts / 50.1-125 kts ±2.5kts
 Resolution: 0.01m/s
 Offset: ±0.01m/s
Wind Direction
 Range: 0-359.9°
 Accuracy: ±0.7° Typical, ±2° Maximum
General Dimensions:
 18.5"(h) x 2.25"(Ødia)
 (356mm(h) x 57mm(Ødia))
 3kg (6.6lbs)
 Weight: 3kg (6.6lbs)
 Anti-icing: Built in de-icing heaters



Temperature & Humidity Sensor*
Temperature
 Range: -40°C to 60°C (-40°F to 140°F)
 Accuracy: ±0.3°C
 Resolution: 0.1°C
Humidity
 Range: 0 to 100% RH
 Accuracy: ±3% RH
 Resolution: 1% RH
General Dimensions:
 11.25"(h) x 7"(Ødia)
 (285mm(h) x 180mm(Ødia))
 7kg (15.5lbs)
 Weight: 7kg (15.5lbs)



Air Pressure Sensor*
 Range: 750 to 1150mBar absolute atmospheric pressure
 Accuracy: 0.01% full scale
 Operating Temperature: -20°C to 60°C
 Storage Temperature: -40°C to 80°C
 Temperature Stability: 0.02% full scale
 Dimensions: 2.36"(h) x 5"(w) x 3.15"(d)
 (60mm x 125mm x 80mm)
 Weight: 0.7kg (1.6lbs)



Wind Processor & Data Distribution Unit
Features
 • Ship's Data Distribution
 • Auto Windward Sensor Selection
 • True & Relative Wind Data Outputs
 • Air Pressure, Temperature & Humidity Data Outputs
 • Sea Temperature Data Output
 • Wind Flow Data Correction
 • Built In Test Equipment (BITE) Fault Reporting
 • Sensor Power Outputs



- Inputs**
- RS422 - Up to 10 Channels
 - Fiber Optic - Dual F/O 100 FX
 - Ethernet or Dual RJ45
 - 10Base2
- Outputs**
- RS422 - Up to 10 Channels
 - Fiber Optic - Dual F/O 100 FX
 - Ethernet or Dual RJ45
 - 10Base2
 - 10 Channels Synchro up to 4.5VA per Channel

Power Supply: 115/230V AC
Dimensions: 13.5"(h) x 15.75"(w) x 31"(d)
 (343mm x 400mm x 788mm)
Weight: 50-60kg (110-132lbs)

8.4" Multi-Function Color Repeater
Display: 8.4" TFT Liquid Crystal Display
Resolution: 640 x 480 pixels
Viewing Angle: >140° (Horizontal & Vertical)
Backlighting: Fully dimmable for viewing in low or high light conditions
Built-in-Test: Yes
Interface: Serial RS422, 100BaseFX Ethernet, (S/W Maintenance - PS/2 Keyboard)
Power Supply: 115V / 230V AC, 24V DC
Dimensions: 11.12"(h) x 7.37"(w) x 4.81"(d), (283mm x 188mm x 123mm)
Weight: 6.8kg (15lbs)
 Direct sun light visible option available 2003



10.4" Multi-Function Color Repeater*
Display: 10.4" TFT Liquid Crystal Display (Landscape)
Resolution: 640 x 480 pixels
Viewing Angle: >140° Horizontal / >110° Vertical
Backlighting: Fully dimmable for viewing in low or high light conditions
Built-in-Test: Yes
Interface: Twin RS422/485 Data Inputs, (S/W Maintenance - PS/2 Keyboard)
Power Supply: 115V / 230V AC, 24V DC
Dimensions: 10.9"(h) x 12.05"(w) x 4.81"(d), (276mm x 306mm x 123mm)
Weight: Din/Panel - 8kg (17.7lbs) / Bulkhead - 12kg (26.5lbs)
 Direct sun light visible option available 2003



15" Multi-Function Color Repeater
Display: 15.0" TFT Liquid Crystal Display (Landscape)
Resolution: 1024 x 768 pixels
Viewing Angle: >140° (Horizontal & Vertical)
Backlighting: Fully dimmable for viewing in low or high light conditions
Built-in-Test: Yes
Interface: Serial RS422, 2 x 100BaseFX Ethernet, (S/W Maintenance - PS/2 Keyboard, RS232)
Power Supply: 115V / 230V AC, 24V DC
Dimensions: 11.5"(h) x 18"(w) x 6.5"(d), (293mm x 458mm x 166mm)
Weight: 18.2kg (40lbs)



Graphic User Interface (GUI)
 For the detailed reporting of faults and system set-up. The GUI facilities include:
 • Wind Flow Data Correction
 • System Interrogation / Status / Built-in Test Reporting
 • In-situ Software Download Support

* Optional expansions to the MORIAH Wind System

