VALEPORT MIDAS TMS TIDE & ENVIRONMENTAL MONITORING SYSTEM

GENERAL DESCRIPTION

The MIDAS TMS represents an evolution in the field of Tide Gauges and environmental Monitoring Stations. Based on Valeport's proven data acquisition techniques, the MIDAS TMS can be configured with a wide selection of commonly used sensors. Features such as touch screen operation and rugged environmental housing make it ideal for stand alone applications, but it can just as easily become an integrated part of your LAN, with ethernet, WiFi, radio and dial up communications options.

Description
The heart of the MIDAS TMS is Valeport's own multi-input data acquisition system, with multiple analogue and digital channels tailored to suit a standard selection of tidal and environmental parameters. However, the real benefits of the system come from the user interface; taking advantage of recent developments in microprocessor and PC technology, the MIDAS TMS uses a miniature single board computer to display and log data, and to communicate with the outside world. As such, the system uses a Windows based touch screen display panel, allowing intuitive access to all the system operating features, and easy to read customisable data displays. But it doesn't stop there - the instrument also has many features you would normally associate with modern PC functionality, such as modem, ethernet or WiFi networking, allowing easy data access to all authorised users , the use of USB peripherals such as printers and removable memory stick, and the simple addition of further digital input channels.

This brochure gives a brief summary of the standard sensors, features and options. However, we are happy to discuss specific variations and requirements not mentioned here.

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TECHNICAL SPECIFICATIONS

SENSOR INPUTS

Analogue Data

The MIDAS TMS may be supplied with any or all of the following analogue sensors as standard. Note that the system may be tailored to suit other or additional sensors on request.

Sensor	Range	Accuracy	Resolution
Tide/Level (x 2)	0 - 10m	±0.01m	0.001m
Water Temp. (x2)	-5°C to 35°C	±0.01°C	0.005°C
Wind Speed	0 - 75m/s	±1%	0.1m/s
Wind Direction	0° - 360°	±1°	0.1°
Air Pressure	600 - 1100mB	±0.5mB	0.01mB
Air Temp.	-40°C to 60°C	±0.1°C	0.01°C
Humidity	0 - 100%RH	±1.5%RH	0.1%RH
Rainfall		±2%	0.2mm
Solarimeter	400 - 1000nm	±0.5%	1min
Visibility	10m - 50km	±4%	10m
Turbidity	0 - 2000FTU	±2%	0.005%

Digital Data

The system is also fitted as standard with 2 digital (RS232 / serial) channels (more may be added). These may be used to log data from any suitable sensor or instrument with a digital output, (e.g. Valeport current meter, acoustic level sensor).

Calculated Data

If fitted with tide sensors, the M TMS also uses full Linear Wave Theory and moving window frequency analysis to calculate significant wave height and mean wave period, in real time.

MEMORY

Data stored to 32Mb USB FLASH (removable), or back up to any LAN directory.

POWER

The MIDAS TMS requires a 12vDC power source. It is fitted with a sealed lead acid back up battery to maintain operation for 1 hour (minimum) in case of power loss, and to ensure controlled shutdown. An AC/DC converter is also available.
Voltage Input: 12 - 15vDC
Current Drain: 2A/1A (screen on/off), using standard sensors.
Voltage Output: 12v, or 5v supply to all fitted sensors

DATA ACQUISITION

Instrument operates a burst sampling pattern, logging mean and standard deviation of all sensors (plus max gust value for wind, & total amount for rainfall).
Sample Rate: 2Hz
Burst Duration: User set, 10 - 600 seconds
Cycle Time: User set, 1 to 1440 minutes

COMMUNICATIONS & NETWORK

All data from single or mulitple gauges may be accessed by multiple users, either in real time or archive.
RS232   Direct communications to PC. RS232/USB adaptor available if required.
Radio   Optional Internal UHF/VHF radio transmission. Requires remote display or receiver.
Modem   GSM or landline modem option (dials at programmed interval or receives incoming call)
WiFi   Low power (~50m) or high power (~500m) wireless networking option.
Ethernet   Direct connection to user LAN.
Web   Data may be output as HTML web page format

DISPLAY & SOFTWARE

MIDAS TMS features an integral touch screen Windows based data display. There is also a secondary display output for a repeater screen, such as a large LCD or plasma screen (maximum 5m from M TMS). The instrument is also supplied with software for displaying real ime and archive data on any connected PC (direct connection, via radio / modem or over WiFi/LAN). Dedicated remote displays with radio / modem / WiFi or ethernet

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