

Data Acquisition Systems

WinAQMS Data Acquisition System

WinAQMS is the culmination of 25 years of successful field experience in data acquisition. The WinAQMS DAS is a fifth generation data gathering and control system that has been specifically designed as a world standard method for use in ambient air and emission monitoring applications.



Applications

WinAQMS features two fundamentally separate but interacting processes. **WinAQMS Server** runs seamlessly in the background and provides for continuous data acquisition and control of the monitoring system, while **WinAQMS Client** provides the graphical front end interface allowing the user to examine data and other configuration parameters. This innovative Client/Server configuration provides for increased reliability, maximises data capture and minimises system down time.

WinAQMS interfaces with a wide range of analysers via the industry standard RS232 serial or USB protocol. This digital connection enables WinAQMS to communicate directly with these instruments. The digital connection also enables multi-dropping of multiple analysers through a single port. This provides many advantages over conventional A/D systems including reducing the amount of wiring required by the system and increasing the accuracy and precision of collected data.

WinAQMS has been designed to allow the operator full system control including automatic calibration at operator defined times and periods, calibration bit patterns for multiple simultaneous calibrations and user configurable schedules to remember settings entered when viewing graphs and data.

Features

- Uses an MS Windows XP operating system
- Industry Standard RS232 and USB enables communication with monitoring equipment
- Multi-dropping of monitoring equipment
- Remote automatic data collection using Ecotech's Wincollect software
- Remote communication with full user interface via a TCP/IP network or dial-up connection
- Captures average, maximum, minimum, total and standard deviations
- Remote system restart and reboot facility
- Calculated channels (including nested calculations and vector averaging)
- Instantaneous wind rose
- Multi-Language support
- User configurable settings for viewing graphs and data
- Automatic Calibrations
- Visual status information on collected data
- Four selectable averaging periods ranging from 1 minute to 7 days
- Autoscaling axis on graphs.



Remote Control

A second version of WinAQMS Client Software may be installed on a remote PC enabling full remote control of the monitoring station. The remote WinAQMS Client will look and feel exactly the same when used from a remote location as it does when used on site. Multiple Clients are able to connect to the WinAQMS server from different locations simultaneously allowing multiple remote computers to view the data being logged in real time. Remote control runs over a GSM link, modem or ethernet LAN.

Calibration Control

WinAQMS provides automatic calibration control signals via an Ecotech Termination Panel. Bit patterns can be used to trigger multiple calibrations at the same time. WinAQMS can perform calibrations at any time of the day or night and can vary the calibration interval by the hour and minute. Calibration data is marked to separate it from measurement data and any calibration status information returned to WinAQMS by the analyser will be recorded.

Data Representation

The data being logged by WinAQMS can be viewed in a variety of different ways. Instantaneous data readings can be shown in a plain text format, plotted on a colour coded graph with up to 60 minutes of data readings or, for wind speed and direction, shown on an instantaneous wind rose. Averaged data can be shown on a graph or in textual format with colours to indicate the status of the data. Autoscaling axis and data point values are also shown with a graph.



Termination Panel

Analog inputs from non digital sensors can be interfaced to WinAQMS using the Termination Panel. The Termination Panel (TP) is a 16 bit device that translates analog signals into digital data records that are then stored by WinAQMS. All analog inputs have built in surge protection and provision for additional lightning protection if required.



Specifications

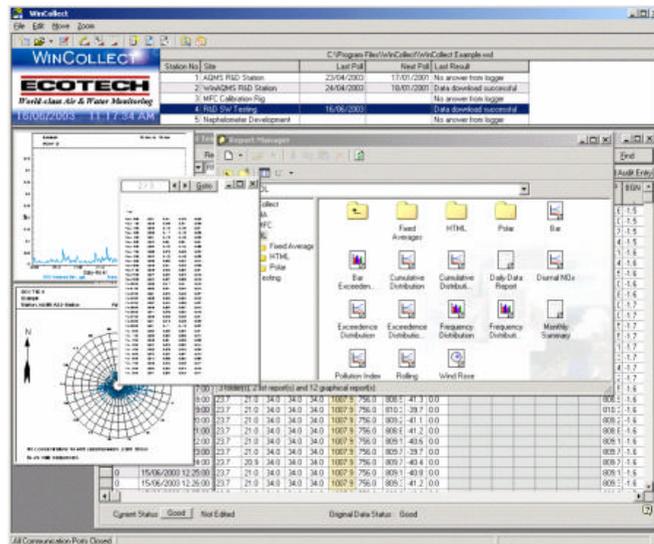
CPU:	x86 compatible processor – 2.6 Ghz+	Calibration control:	Automatic Span and Zero control.
RAM:	512 MB.	Communication ports:	Calibration data stored separately.
Hard Drive Config.:	RAID (optional 2nd hard drive as backup)		4 RS232 serial ports standard, (1 used for the modem) and network card (upgrade to 34 RS232 ports)
DVD-RW:	Used for installation of software and backing up of data/configuration files		6 x USB2.1 Ports
Display:	SVGA - better than 800 x 600+.	Modem Port:	1 x RS232 DB9M
Display Driver:	Supporting up to 2048 x 1536 dual screen	Disk drive:	3.5" high density (1.44 MB) FDD & DVD-RW
Modem:	9600 Baud or greater.	Mouse port:	USB port.
Operating System:	Windows XP PRO	Operational Environment:	0 – 40C
Data Storage:	IDE Hard disk drive 80 Gb Data Stored in Ascii format.	Power:	360 Watt power supply.
Data Avg. Periods:	Up to 4 independent data sets. Selectable between 1 minute and 7 days	Size:	434x480x177 mm (WxDxH) rack

WinCollect Data Evaluation & Reporting

WinCollect is Ecotech's Windows based software designed to collect, validate and report on environmental monitoring data. Its design encapsulates Ecotech's twenty five years of experience in the collection of data from environmental monitoring systems.

WinCollect is designed to interrogate and control environmental monitoring systems and networks, simplifying the tasks of automatically or manually retrieving measurement data, collating and storing data into a database, and summarising data into comprehensive reports.

WinCollect can interrogate Data Acquisition Systems from a local computer directly connected to the logger, or from a remote computer located anywhere in the world and connected to the logger via TCP/IP ethernet, switched telephone, short haul modems, radio, cellular telephone, or satellite telephone networks.



Two major versions of WinCollect are available - the standard version, and a multi-user version that stores data in a central MS SQL Server 7/2000 Database. This multi-user version allows multiple users to view, collect, and validate the data depending on their designated level of access.

Features

Runs on MS Windows 98/2000/XP operating system, facilitating stability and ease of use.

Enables **remote automatic data collection** from 1 to 100 stations.

Provides **full remote control** over Ecotech's data loggers, including real-time viewing of all measurement, status and diagnostic information.

Collects data directly from Data Electronics Datatakers, ESC 8800/8816 and Opsis AR600 Analysers and Campbell Scientific CRX Series data loggers. Manual import of data from Starlogger & Unidata loggers.

Drop-down menus help simplify the collection and reporting of data.

Powerful database capabilities enable data to be edited and inserted manually or automatically.

Data fixing capability to correct sections of faulty data.

Automatic data collection and reporting - the previous days summary can be emailed to you, sent to your printer each morning, saved on your WWW server, or visible on the main WinCollect screen.

Wide range of Graphical and text reports including Polar plots and Pollution Index Plots.

Extended Import support for importing the raw WinAQMS WAD file format and the CSV file format.

Support for Opsis systems which implement multiple paths in their gas analysis.

Datataker support including reset commands which aid in avoiding and recovering from system lockups.

Report Manager to manage your reports with greater ease and power.

List Report Editor has aligned WinCollect with requirements of Windows™ operating systems 2000 and XP.

List Report Wizard to generate report templates for your customisation.

Diurnal Analysis for comparing data from different time windows on the same axis of a single report

Fixed Average to plot Capture data with fixed average formatted graphical reports.

Average period specification supports monthly, quarterly and yearly averaging periods in graphical reports.

Calculate Channels helps you implement calculated channels faster than ever before.



Data Collection

WinCollect's data retrieval program provides an easy to use means for setting up the configuration and polling period for each data acquisition system, once the configuration is setup each DAS in the network is automatically polled and data retrieved. WinCollect can connect to multiple Ecotech DAS that are connected to a TCP/IP Network. This effectively provides access to all loggers through one modem eliminating the need for modems to be connected to each logger.

Data Validation

Downloaded data is imported into a database where data can be viewed, edited, and corrected for any erroneous entries, or have measurement data not logged by the data acquisition system inserted. Data in the database is displayed in a series of columns, each cell coloured depending on the status of the data. Manual changes may be made to this data. Changes made to data in the database require the operator to enter a reason for the change, which will automatically place an entry in the Audit Log. Multiple entries can be edited in the database at once using the Fix Data Menu.

Reports

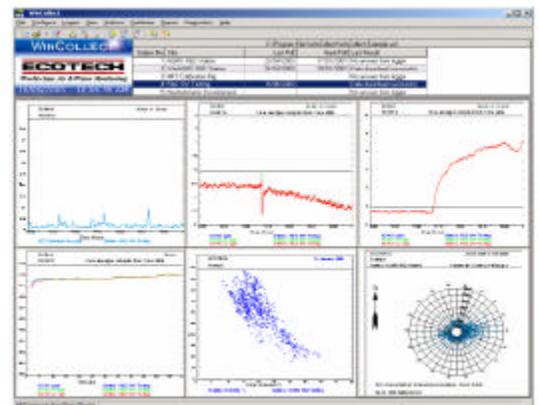
WinCollect uses List Report Wizard to quickly create a variety of reports in tabular format. The Wizard provides step by step instructions enabling the user to quickly design the report. These reports can then be modified using a custom design interface and can also be dumped straight to an ASCII file, enabling both text and HTML files to be generated. This then allows the HTML file to be transferred to a web site at a predefined interval.

The initial configuration for Graphical reports uses drop-down menus to easily select the relevant stations, channels, and report types. Graphical reports are generated in the standard Windows Enhanced Metafile format enabling them to be copied directly to other Windows applications and printed on any printer supported by Windows 98/NT/2000/XP. Support for JPG, PCX, BMP, TGA and TIF graphics formats is also available. Alarm reports can also be generated and displayed on the screen, sent to a printer or emailed to a designated email address.

WinCollect incorporates an automatic report scheduler which enables the production of reports on a fully automatic basis over preconfigured time periods and intervals. You can specify when a report will be run, when it will be next produced, what form the report will assume and where it will be placed once produced.

Graphs & Reports supported include:

- Line, Bar Graphs (Average, Maximum, Minimum, Log Mean, - Standard Deviation, Rolling Averages, Percentile)
- Average Pollution Plots
- Scatter Plots
- Percentage Pollution Concentrations
- Frequency Distribution Histogram - linear/logarithmic
- Cumulative Frequency Distribution Plots - linear/logarithmic
- Wind Rose, Polar Pollution, Polar Scatter plots
- Pollution Indices
- List reports - Formatted text, tables



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