

CEMDAS™ Data Acquisition System



About CEMDAS™...

A Complete Solution

CEMDAS is a sophisticated Data Acquisition System for use with Continuous Emissions Monitoring Systems (CEMS). Coupled with Monitoring Solutions' CEMCON™ PLC controller, the CEMDAS package is a powerful, user-friendly Windows-based system for monitoring, recording, and reporting stack emission information. CEMDAS is standard with every new Monitoring Solutions CEM System, and can also be added to existing CEM Systems as an upgrade.

Intuitive Ease of Use

CEMDAS software is written in Visual Basic for the Windows operating system and utilizes common commands, screens and tools that most users are familiar with and use everyday. CEMDAS software cuts training time by utilizing a simple and easy to follow pull-down menu structure.

Highly Configurable

CEMDAS is designed to be easily customized for each individual user. Total cost of ownership is reduced through this highly configurable design. Monitoring Solutions is able to provide cost-effective upgrades and modifications when user needs and requirements change.

CEMDAS is also designed to be easily upgraded and supported as both customer needs and EPA regulations change. This means never getting caught with an old version that's expensive to upgrade or must be replaced to meet new requirements. Its unique software design allows quick upgrades to all CEMDAS customers in the shortest amount of

time – regardless of the uniqueness of each user's application.

CEMCON Controller

The CEMDAS uses Monitoring Solutions' CEMCON PLC controller system. Monitoring Solutions offers the option of a GE Fanuc 90-30 or Allen Bradley SLC-500 PLC. CEMCON is flexible and configured to meet each customer's individual needs.

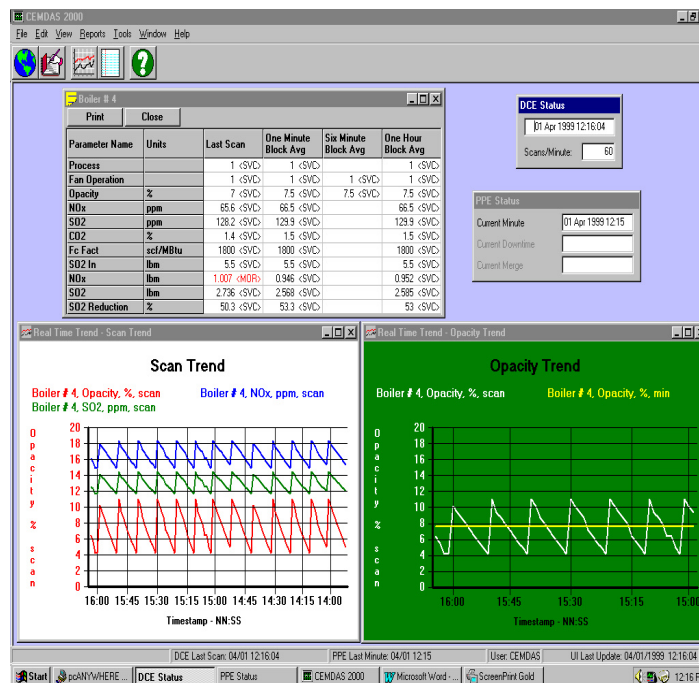
Besides the I/O utilized by the CEMDAS software for monitoring and reporting functions, a number of other I/O is available including any number of: Digital Inputs, Digital Outputs, Analog Inputs and Analog Outputs. Utilizing these optional I/O modules, a user can customize their CEMDAS to include a variety of plant monitoring and control functions as needed.

Powerful Reporting

Pre-configured reports are guaranteed to meet EPA CFR Part 60, 75, 266, and 503 requirements. Reports can be generated automatically or manually, and sent to a printer, the screen, or a disk file. Available reports include minute, hourly, daily, monthly and quarterly reports, along with RATA and CGA/Linearity reports..

Besides the standard reporting features, CEMDAS is packed with additional features designed to allow a user to better diagnose and understand their CEMS system. Some of the features include:

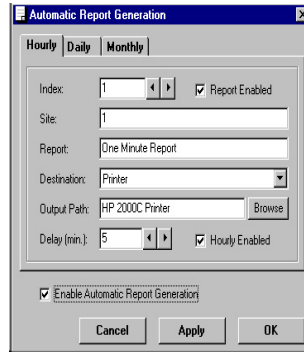
- Trending
- System Activity Logs
- Alarm Logs
- Screen Reports
- And more...



The screenshot shows the 'Alarm Configuration' dialog box. It has a 'Select Site' dropdown menu set to 'Boiler # 4'. Below that is a 'Select Parameter and Alarm' section with 'NOx, ppm' selected in the parameter dropdown and 'AVGE' in the alarm dropdown. The 'Alarm Values' section has three input fields: '10000' for 'Low', '70' for 'High', and '70' for 'High-High'. The 'Alarm Handling' section has 'MIN HI ALM' selected in the dropdown, '7' in the adjacent dropdown, 'Priority' selected for 'Alarm Type', and 'HORN1' selected for 'Enable Audible Alarm'. There are checkboxes for 'Enable Alarm Notification' and 'Enable Audible Alarm', both of which are checked. At the bottom are 'Cancel', 'Apply', and 'OK' buttons.

Guaranteed...

Monitoring all CEM System operating parameters, CEMDAS provides a powerful tool for the collection of real time data, and the report generation necessary to comply with Federal, State, and Local requirements. CEMDAS is guaranteed to provide all of the reports needed for meeting the requirements of an air permit.



The 'Automatic Report Generation' dialog box has three tabs: 'Hourly', 'Daily', and 'Monthly'. The 'Hourly' tab is selected. It contains the following fields and options:

- Index: 1
- Site: 1
- Report: One Minute Report
- Destination: Printer
- Output Path: HP 2000C Printer
- Delay (min.): 5
- Report Enabled:
- Hourly Enabled:
- Enable Automatic Report Generation:

Buttons: Cancel, Apply, OK

Remote CEM System Control

CEMDAS allows a user to initiate daily calibration checks, quarterly audits, and purge the probe from the CEMDAS computer with simple one-button commands. Optional remote terminals can be supplied to monitor and control the CEMS from additional locations other than a main control room or CEMS enclosure.

Automated Utilities

In addition to automatic report generation, CEMDAS includes automated database backup. This insures critical data is never lost.



The 'Database Backup' dialog box has the following sections:

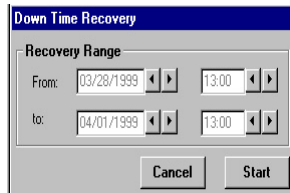
- Select Files to Backup:** Data - Averages, Data - One Second Scans, Data - Logs and Other Files, Reports, CEMDAS Configuration Files.
- Destination:** C:\CEMDAS\BACKUP
- Automatic Backup Properties:** Enable Automatic Backup, Backup Increment (days): 1, Backup Start Time: 05:00 AM, Last Backup Completed: 12/05/1998 11:07 AM, Next Scheduled Backup: 01/07/1999 04:55 PM.

Buttons: Cancel, Save

continue collecting and storing data in the event of a CEMDAS computer or communications link failure. After the failure is repaired, recovery of the data from the PLC can be made in a few simple steps.

Downtime Recovery

Because missing data due to computer or communication failures can be very expensive, Monitoring Solutions offers a Downtime Recovery option for CEMDAS. Utilizing a data storage module in the PLC allows the CEMDAS PLC to



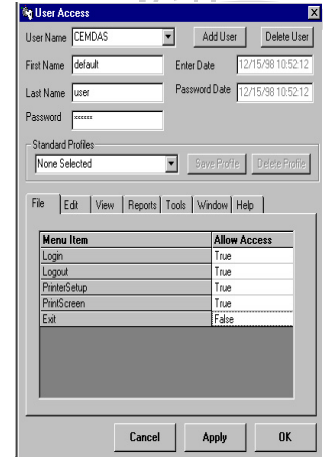
The 'Down Time Recovery' dialog box has a 'Recovery Range' section with the following fields:

- From: 03/28/1999 13:00
- to: 04/01/1999 13:00

Buttons: Cancel, Start

Security

Using advanced security features, CEMDAS can be configured for various user levels. The entire menu is password protected down to individual menu items. A user can select which users may access the system and what commands and functions will be available to that user. This insures only those who are authorized can make changes to, or access the system.



The 'User Access' dialog box has the following sections:

- User Name: CEMDAS
- First Name: default
- Last Name: user
- Password: *****
- Enter Date: 12/15/98 10:52:12
- Password Date: 12/15/98 10:52:12
- Standard Profiles: None Selected

Menu Item	Allow Access
Login	True
Logout	True
PrinterSetup	True
PrintScreen	True
Exit	False

Buttons: Cancel, Apply, OK

Upgrade for Existing Systems

CEMDAS will work with nearly any CEM System on the market today. Upgrading to CEMDAS can be a relatively inexpensive way to modernize an older CEMS. A Monitoring Solutions' sales representative can ascertain the easiest upgrade path and present the most economical solution for bringing a DAS system into the new millennium.

In some cases, utilization of existing PLC components can help to keep the cost down and allow for an upgrade even on a modest budget.

Service and Support

Monitoring Solutions Service Representatives stand behind the CEMDAS System offering world-class service, training and support. Packages can be provided offering a variety of support levels depending on the needs of each individual user.

Remote Support

One way to keep costs associated with service and maintenance of a CEMDAS system is the remote support feature. All CEMDAS systems include modems and software that allow remote control and monitoring of the system. Remote support allows a Monitoring Solutions Service Engineer to quickly troubleshoot, diagnose and support the CEMDAS system without a site visit.

CEMDAS can also be upgraded from a remote location via the same modem when necessary.



CEMDAS Service Contract

A Service Contract with Monitoring Solutions means the ultimate in priority support and customer response. Some of the advantages a Service Contract can offer include:

- **Operation & Maintenance Support** - Monitoring Solutions will provide unlimited telephone and modem support during Monitoring Solutions' normal business hours to answer questions relating to the operation and maintenance of a CEMDAS system.
- **24/7 Emergency Telephone & Modem Support** - Unlimited telephone and modem support for any emergencies that occur during or outside of Monitoring Solutions' normal business hours.
- **Guaranteed On-Site Response Time** - A Monitoring Solution's Service Engineer will be on-site within 48 hours of determination that on-site support is required.
- **Defect Repair** - Monitoring Solutions will correct any CEMDAS/CEMCON software defects discovered at no charge.
- **Version Upgrades** - Support Contract customers receive available software version upgrades containing functionality and performance enhancements at no cost during the term of the contract.
- **CEMDAS Training** - Once per year a customer may elect to have a Software Engineer visit the site and conduct a refresher course (2-3 hours) on the Operation and Maintenance of the CEMDAS System.
- **Field Service Discount** - Customers receive a substantial discount on Software Engineer travel rates.

For additional information contact Monitoring Solutions at...

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