

# Model DCM932 PLC Data Coprocessor Module



*The Model DCM932 PLC  
Data Coprocessor Module  
delivers unmatched flexibility  
and performance in data  
acquisition and reporting*



ESC's Model DCM932 PLC Data Coprocessor Module expands the industry-standard GE Fanuc Series 90™-30 PLC into a powerful tool for CEMS/PEMS regulatory compliance. The Model DCM932 adds high speed processing, additional communication protocols (including the industry-standard Modbus protocol), connectivity to third-party remote I/O devices, as well as providing intelligence for regulatory calculations compliant with 40CFR75, 40CFR60, and a variety of other reporting environments.

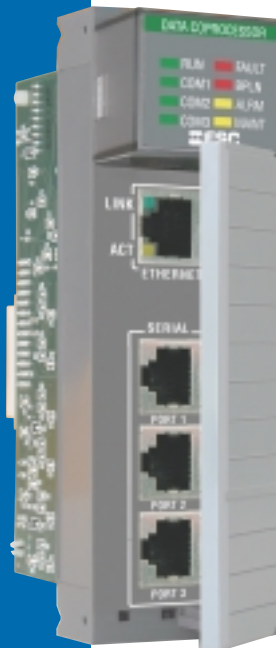
The Model DCM932 also features a user interface over Ethernet or Serial/RS-485 ports to provide the local CEMs technician with visibility into current data, as well as a platform for data entry (e.g., updating calibration gas bottle values), report generation, configuration and I/O troubleshooting. This capability vastly increases the usability and visibility over any other PLC-based DAHS solution.

Coupled with ESC's industry leading E-DAS software and ESC's top-rated customer service, the Model DCM932 PLC Data Coprocessor Module provides the best PLC-based solution for new or legacy systems on the market today.

# Model 7560 PLC Data Coprocessor Module



*The Model 7560 PLC  
Data Coprocessor Module  
delivers unmatched flexibility  
and performance in data  
acquisition and reporting*



ESC's Model 7560 PLC Data Coprocessor Module expands the industry-standard Allen-Bradley SLC 500 Series PLC into a powerful tool for CEMS/PEMS regulatory compliance. The Model 7560 adds high speed processing, additional communication protocols (including the industry-standard Modbus protocol), connectivity to third-party remote I/O devices, as well as providing intelligence for regulatory calculations compliant with 40CFR75, 40CFR60, and a variety of other reporting environments.

The Model 7560 also features a user interface over Ethernet or Serial/RS-485 ports to provide the local CEMS technician with visibility into current data, as well as a platform for data entry (e.g., updating calibration gas bottle values), report generation, configuration and I/O troubleshooting. This capability vastly increases the usability and visibility over any other PLC-based DAHS solution.

Coupled with ESC's industry leading E-DAS software and ESC's top-rated customer service, the Model 7560 PLC Data Coprocessor Module provides the best PLC-based solution for new or legacy systems on the market today.

# Model 8832 Data System Controller



*ESC's Model 8832 Data System Controller delivers unmatched flexibility and performance in data acquisition and reporting.*

*Our 'next generation' design provides more processing power - increased program, configuration and long-term data storage - designed to meet your growing data system and regulatory requirements.*

ESC's advanced Model 8832 Data System Controller is designed around a high performance, 32-bit Motorola PowerPC processor running at 50MHz. Standard data storage space has been increased from 40,000 to over 100,000 data points. The configuration space has been more than tripled, allowing up to 99 channels of input or calculated values. The increased speed allows a new value to be calculated each second on any of the channels. An optional 2 MB memory card can expand long-term data storage to over 300,000 data points.

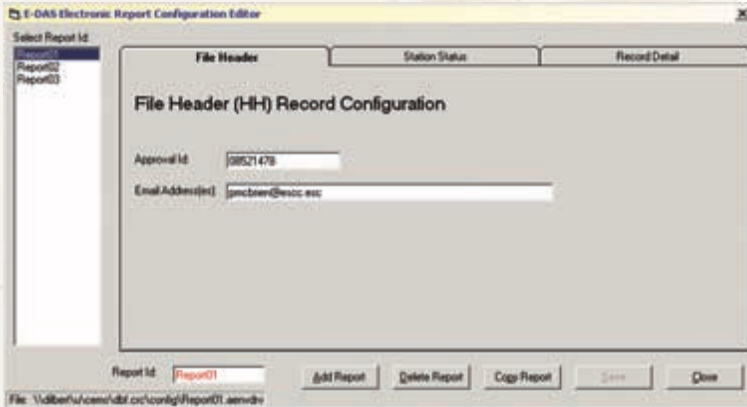
Additional capabilities of the Model 8832 include an optional color LCD display to facilitate display of alarms. A VGA video output port allows an external monitor to be connected to the Model 8832 to provide a 640x480 color viewing display. An Ethernet communications port and high speed serial communication ports not only allow for faster configuration downloads and data polling, but also enable new software versions to be loaded without an EPROM change.



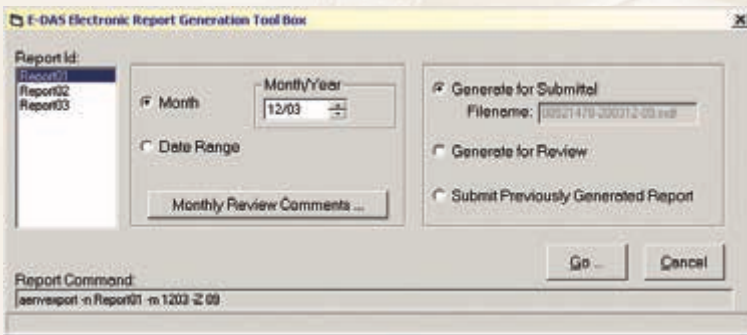
Model 8832 Communications Panel

# Alberta Reporting Module

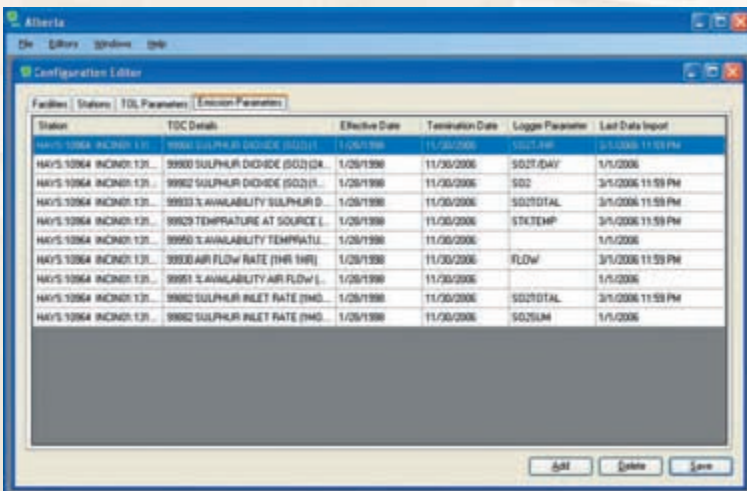
for E-DAS EMR for Windows® Software



Report Configuration Editor



Report Tool Box



Station	TQC Details	Effective Date	Termination Date	Logger Parameter	Last Data Input
NAK'S 106A INCRNO: 131	8990 SULPHUR DIOXIDE (SO2)E	1/08/1998	11/30/2006	SO2T.DAY	3/1/2006 11:59 PM
NAK'S 106A INCRNO: 131	8990 SULPHUR DIOXIDE (SO2)D4	1/08/1998	11/30/2006	SO2T.DAY	1/1/2006
NAK'S 106A INCRNO: 131	8992 SULPHUR DIOXIDE (SO2)E1	1/08/1998	11/30/2006	SO2	3/1/2006 11:59 PM
NAK'S 106A INCRNO: 131	8993 % AVAILABILITY SULPHUR D	1/08/1998	11/30/2006	SO2TOTAL	3/1/2006 11:59 PM
NAK'S 106A INCRNO: 131	89929 TEMPERATURE AT SOURCE L	1/08/1998	11/30/2006	STXTEMP	3/1/2006 11:59 PM
NAK'S 106A INCRNO: 131	8995 % AVAILABILITY TEMPRATEL	1/08/1998	11/30/2006		1/1/2006
NAK'S 106A INCRNO: 131	89930 AIR FLOW RATE (AIR FLOW)	1/08/1998	11/30/2006	FLOW	3/1/2006 11:59 PM
NAK'S 106A INCRNO: 131	89951 % AVAILABILITY AIR FLOW L	1/08/1998	11/30/2006		1/1/2006
NAK'S 106A INCRNO: 131	89962 SULPHUR INLET RATE (SML)	1/08/1998	11/30/2006	SO2TOTAL	3/1/2006 11:59 PM
NAK'S 106A INCRNO: 131	89962 SULPHUR INLET RATE (SML)	1/08/1998	11/30/2006	SO2SLM	1/1/2006

Sample Report

Agilaire has released a reporting module to specifically meet Alberta Environment's new monthly electronic reporting requirements.

Coupled with **Agilaire's E-DAS EMR for Windows®** software, the system provides automated data acquisition, control, and reporting for CEM and PEM systems, based on the industry-recognized Agilaire Model 8816/8832 Data Controller family, or Allen-Bradley/GE PLC's.

Advanced Features include:

- Automation of data codes
- Automatic tracking of submission file versions
- Preview submission files
- Automated FTP submission



FOR MORE INFORMATION

**Agilaire Sales & Marketing**  
865 927-9440 x104  
[info@agilairecorp.com](mailto:info@agilairecorp.com) email

# Direct Extractive CEM Systems

AMP CEM Elite systems are ideally suited for process control, process heaters, incinerators, gas turbines, utilities, boilers, furnaces, SCR-NOx control, and FGD performance monitoring.



## AMP CEM Elite Systems

Easy to operate, AMP CEM systems can be configured to monitor for one or all of the following:

- NO<sub>x</sub>    • SO<sub>2</sub>    • CO<sub>2</sub>    • O<sub>2</sub>
- CO    • THC    • Mercury
- H<sub>2</sub>S    • HCl & HF Acid    • NH<sub>3</sub>
- Particulate    • Opacity
- Volumetric Flow & Moisture
- Custom CEM Applications

## Direct Extractive CEM System Components

- Cherokee Model 20E Flow Controller
- ESC Model 8832 Data Logger
- CAI ZRH IR Gas Analyzer
- API SO<sub>2</sub> Analyzer
- API NO<sub>x</sub> Analyzer
- API CO Analyzer
- Baldwin Sample Conditioner

## Modular Design

AMP CEMS utilize a plug-and-play functional design for all major components. This approach minimizes manufacturing delays and offers rapid CEM maintenance and repairs.

## Redundant Sampling Systems with Multiple Analyzers

AMP is the only CEM integrator to provide totally redundant sampling systems as standard equipment. From the probe tip in the stack to where the sample gas is introduced to the analyzers, AMP provides the necessary connections for four gas analyzers (six are available) as its standard CEM design.



## Ease of Operation & Maintenance

CEM systems from AMP are the easiest to maintain due to their plug-and-play functional design and built-in sampling system redundancy. Maintenance activities are only responsible for minimal CEM downtime whenever the redundant sampling system is utilized.

## Contact AMP

John Kelley, Operations Manager  
877 267-2367 toll free  
johnk@ampcems.com  
[www.ampcems.com](http://www.ampcems.com)



# The Only Field-Proven Mercury CEM Solution

ESC offers Tekran's proven engineered solutions over the widest variety of fuels and wet/dry stack conditions - more than any other vendor!

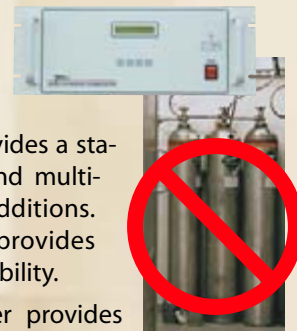
## Custom Probe

ESC's Mercury System is a dilution based system utilizing an inertial filter to avoid sampling artifacts. The system continuously monitors and logs all of the system's flow rates, pressures and temperatures. It automatically adjusts for orifice upstream pressure. For additional accuracy, the system controls the temperature of the entire dilution assembly to within  $\pm 1^\circ\text{C}$ .



## Low Cost Mercury Calibration!

Tekran's Model 3310 Elemental Mercury Calibration Unit frees you from the uncertainties and high cost of calibration gas bottles. It provides a stable and precise source for single and multi-point calibrations and standard additions. Tekran's unique approach provides unmatched accuracy and NIST traceability.



ESC's CEM Data System Controller provides **full connectivity to your plant DCS and DAHS** via standard connection methods that include TCP/IP, Modbus, and OPC. Traditional serial and current loop outputs are also available.

## Cold Vapor Atomic Fluorescence

The ESC Mercury CEM System uses the same technology originally developed by Tekran to monitor mercury in ambient air at the parts per quadrillion (10-15) level. The Tekran mercury analyzer offers the best accuracy, selectivity and reliability of any instrument on the market today. The technology is immune to the interference that plague conventional CEMs.



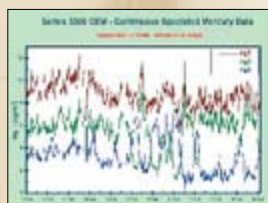
ESC uses Tekran's **patented method of sample speciating and conditioning** to resolve  $\text{HgCl}_2$  recombination after sample conversion.

## Speciated Measurement

The system measures of total mercury ( $\text{HgT}$ ) and elemental mercury ( $\text{Hg0}$ ) directly and determines ionic mercury ( $\text{Hg2+}$ ) by difference. This additional information can provide real time feedback for the operation of your mercury control technologies, allowing optimization of your reduction processes.

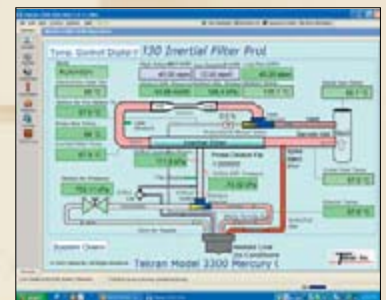
## Remote Monitoring & Analyzer Health

ESC's Mercury CEMS provides over 160 internal monitoring and diagnostic parameters. This capability can be configured with custom alarms and paging to enhance system performance, reliability and data availability.



## Advanced Diagnostics

The graphical user interface provides a simple system overview. Detailed status information is instantly available to experienced users. An internal scheduler allows unattended activation of calibrations, spikes and blowbacks. All these diagnostic and control capabilities are available remotely via network or dial in connections.



## Compliance QA

Tekran pioneered the concept of using standard additions ("spikes") within the flue gas matrix to test verify overall system accuracy. These additional QA capabilities complement the ongoing daily and weekly performance tests.



For more information:  
**ESC Sales**  
 865 688-7900 x1383  
 sales@envirosys.com




# COMScope3

## The latest move in opacity compliance and CAM monitoring - ESC's COMScope3!



Transceiver



Retro-Reflector

### Get the reliability you need with ESC's COMScope3

Tens of thousands of opacity and dust monitors the world around are measured by one primary yardstick - reliability. Being one of the only required on-stack measurements, the ability for a monitor to operate for an entire quarter without any kind of preventative maintenance or repair is crucial.

If you're not getting the reliability you want out of your opacity monitor, the solution is here with ESC's COMScope3.

### Designed for Reliability

COMScope3 utilizes an optical measurement system with no moving parts, a fiber-optic link to the system controller, and automatic zero drift compensation to eliminate trips up the stack for other than required quarterly audits. The COMScope3 utilizes a patented approach to correct for drift between the measurement detector and the reference detector. LED sources further enhance instrument lifetime and stability.

### Constant Health Monitoring

Optional fiber-optic data cables provide a lightning-resistant link from the COMScope3 to the system controller and/or plant DCS. In addition to carrying basic readings and status data, the data link can monitor internal diagnostic parameters and alarm

the user via e-mail or cell phone to monitor problems before they result in downtime. Open Path Length Ratio (OPLR) settings can be logged into the data acquisition and handling system for a complete audit trail and ASTM compliance.

### Routine Service Made Easy

COMScope3 includes a built-in audit jig that accepts standard neutral density filters to make quarterly audits a snap. Zero alignment can be checked without removing the instrument from the stack. An access panel on the stack provides data and settings without having to "call down" the stack. Remote diagnostic capabilities ensure that you go up the stack just once, with the right parts.

### Triple LED Alignment Technology

All LED's have a "blind spot" caused by the electrical contacts at the back of the LED. Opacity monitors using a single LED source are subject to variations in opacity measurement with any slight misalignment, even though the instrument will indicate it is aligned. The patented COMScope3 feeds illumination from three LEDs into a common diffuser to eliminate this blind spot found in single-LED systems - a problem that can't be solved with bigger beam sizes.

For more information:

**ESC Sales**

865 688-7900 x1383

sales@envirosys.com

[www.envirosys.com](http://www.envirosys.com)



To the requirements of the 13th BImSchV and TA Luft



Compliant

Meets or exceeds  
ASTM Standards  
D6216-98  
D6216-03