Protea
technology leadership in measurement solutions

atmoStation

atmoStation
Emissions Monitoring Server

Data Collection and Reporting
For Emissions and Industrial Process Applications

The continuous logging, reporting and assessment of data is required by plant operators to identify trends, react to changes or to ensure compliance with environmental permits. Protea's atmoStation is a complete online data acquisition and handling (DAHS) hub containing a wide range of data collection protocols and can be supplied running certified emissions reporting software.

atmoStation provides a complete historical log of data to meet the needs of operators or any local inspections. High quality displays of real-time data can be configured to be as simple or as detailed as needed, featuring multi-windows and resizable graphs and charts. Historical data from commissioning onwards is accessible via the trend and reporting facilities.

Unlimited sensor readings can be inputted at 1 second internals. Any instrument with a digital or analogue output signal can be integrated.

Emissions Reporting

atmoStation can be provided with two software options, depending if the application requires certified emissions reporting software or not.

Protea's atmosFIR CEM Data Collection (AC-DC) Emissions Reporting software has been developed to the high standards required by continuous emissions monitoring standards, certificates and directives including MCERTS, the IED regulations for power plants (Directive 2001/80/EC) and waste incinerators (Directive 2000/76/EC), European Standard EN 14181, US EPA and Environmental Permitting (EP) regulations (Part A and Part B). AC-DC also meets the requirements of EN 17255 Data acquisition and handling systems.

If certified emissions reporting is not required, then ProDAHS software can be run on atmoStation, which does not include the MCERT-compliant aspects such as QAL3 control charts and auditing. ProDAHS still provides the full capabilities of data collection and reporting as AC-DC.

atmoStation can record critical plant data such as gas, dust, flow, temperature and pressure from both Protea and 3rd party instruments. Status and alarm events can be read and acted on.

The operator can select and export data for any time periods in real-time whilst the CEM is operating. Configurable reports can be built for local inspectors and Environment Agency needs in the required formats. User interaction can be as simple as generating regular reports, or advanced users can configure bespoke reports when needed.
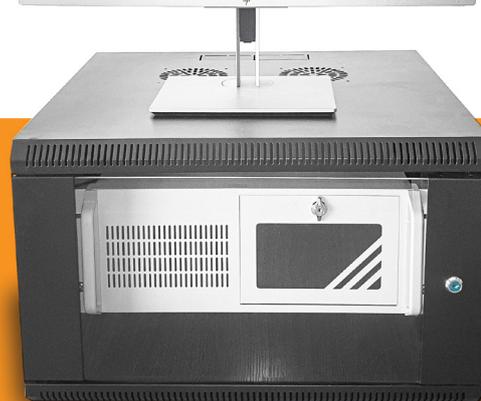
Emissions and Metrology Data Acquisition and Reporting system:

❊ Emissions, Ambient Air, Meteorological and Process Data

❊ ProDAHS or AC-DC (MCERTS Certified) Reporting software

❊ Ethernet / Serial / USB / Analog / Digital inputs

❊ Wide range of protocols – Modbus/Profibus/OPC

❊ Configurable reports ready for print

❊ Real-time graphs and charts

❊ Span gas delivery to CEMs

❊ **Incineration** (Chemical/Clinical/Municipal)

❊ **Power** (Gas/Coal/Oil/Biomass)

❊ **Cement Works**

❊ **Chemical industry**

❊ **Petrochemical**

❊ **Pharmaceuticals**

❊ **Refining**

❊ **Gas Turbines**

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Data can be displayed as raw data, in a number of different measurement units, or data corrected to reporting conditions, with or without QAL2 calibration functions, can be shown. Dynamic time-weighted average data can be displayed, such as 1min, 30min, 1hr, Daily, Weekly and Monthly averages. Configurable Partial Averaging can be used to alert users of impending breaches giving operators time to make plant adjustments before ELVs are breached.

EN 14181 Compliance

The requirements of EN 14181 are met with management tools for the on-going quality assurance of the CEM data. QAL 1 data can be entered into the system to provide the settings needed to determine maximum allowable drift limits – as the CEM supplier Protea will set all of the parameters relating to the analyser for the user. QAL3 implementation via control charts and warnings is comprehensive.

All data can also be exported in a variety of formats for external examination and processing. This can assist with maximising plant efficiencies and diagnosing potential problems with the plant processes. Reports access data immediately on its creation to provide the most up-to-date measurement and system statuses. The MCERTS reports come in PDF format with our official MCERTS Watermark ensuring that all data reported has been processed as per the standard.
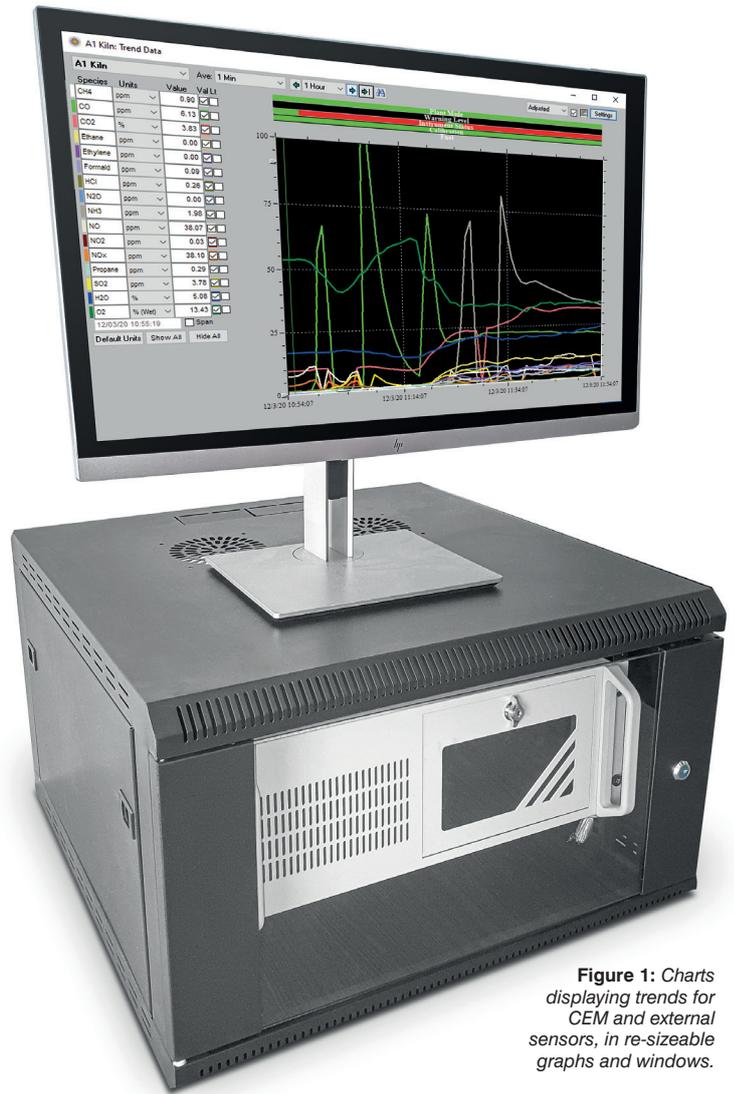
Figure 1: *Charts displaying trends for CEM and external sensors, in re-sizeable graphs and windows.*

Quality Assurance of atmosFIR CEM with AC-DC Emissions Reporting Software

QAL1 Data	✔
QAL2 Tests	✔
QAL2 Calibration Functions	✔
AST Tests	✔
QAL3 Tests	✔
QAL3 Control Charts	✔
Uncertainty	✔

Zero and Span Gas Module

✳ **Up to 7 gas span check inc. system zero**

✳ **1 barg input**

✳ **Span gas pressure alarm**

✳ **Check gas delivery to analyser or to probe**

✳ **Regular sequence or manual control**

Figure 2: *Protea's span gas control module can be provided with atmoStation to control automated span gas checks as per QAL3 requirements*

atmoStation

Software Features

Displays and Trends	• Selectable Raw, Validated and Adjusted readings • Block, Rolling and Partial averages • Trend and Bar charts • Data grid displays for averaged data • Error and Event logs
Units	• ppm, mg/m3, mg/Nm3, Kg/hr, %, m/s and mass emissions in Kg/hr
Warning	• On screen warnings • Email, SMS / Text message • Plant wide audible sirens or physical warning lights
EN 14181 QAL1 and QAL2 *(AC-DC only)*	• QAL1 data entry • QAL 2 Calibration Functions • Uncertainty
EN 14181 QAL3 *(AC-DC only)*	• CUSUM Drift • CUSUM Precision • Shewhart • Exponentially Weighted Moving Average (EWMA)
Reports	• User Configurable Averaged Data Report • LPCD Reports: Form Air 2, 3, 6, 11 • WID Reports • System Configuration Report
Data	• Modbus Serial • Modbus TCP/IP • ProfiBUS • ProfiNET • FieldBUS, • ODBC • OPC • Analogue signals • CSV export and others on request
Export	• PDF or Excel • Back-up to plant Server or NAS

Figure 3: *Wide range of connectivity and communications as standard - 3x Ethernet, 6x Serial, 12x USB, 64-ch AIO, 128-ch DIO as standard*

Hardware Features

Processor	• Intel Core i3-6100TE 2.70GHz CPU
Memory	• 8GB DDR4 2133MHZ 288-pin DIMM Memory
Storage	• 2 x 2.5" SSD Samsung Evo 860 Series 250GB • RAID Array • Hot-swappable, Lockable
OS	• Windows 10 IoT Enterprise, LTSB, Multilanguage
Serial	• 6 x COM –RS485/RS232
USB	• 12 x USB
Ethernet	• 3 x Gigabit Ethernet
Wireless	• Cellular router option with • WiFi, 802.11/b/g/n • 2 x 10/100 MB LAN (2 x LAN) • 2 x SIM/R-UIM interface - Dual SIM for back-up between networks
Analogue	• 64-ch, 16-bit, Analog Input
Digital	• 128 Channel Isolated Digital I/O
Interface	• 1U keyboard and trackerball (w/ 17" monitor option)
Span Gas Module	• Rack module for check gas input • 7 gas input 1 barg input • Direct or Probe span gas

Figure 4: *Hot-swappable SSD drives allow for simple replacement or back-up*

Set-up, Support and Benefits

Set-Up Simplicity

With atmoStation and data reporting software from Protea, the full emissions reporting system is set-up and configured before shipment to site. As analyser manufacturers, Protea are well placed to optimise the data collection parameters and ensure that the data is logged correctly and the reports are fit for purpose during any Site Acceptance Test process. There is minimum on-site set-up, configuring inputs from various analysers and sensors. Protea provides the complete solution.
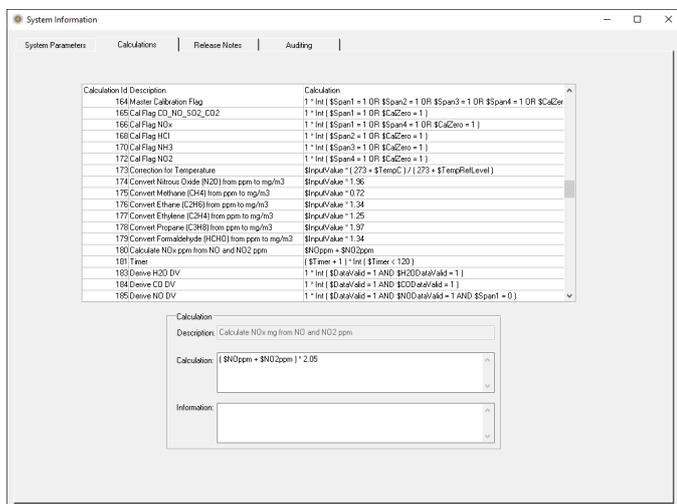
Figure 5: Calculations set-up by Protea during CEM acceptance. Can be added, checked and changed to give unlimited options for data processing and presentation.
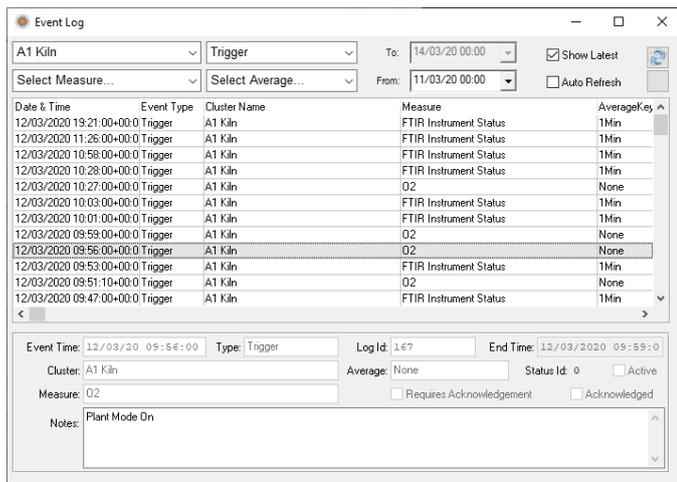
Figure 6: Detailed event log for CEM and Plant status and alarms.

Combined Support – CEM + DAHS

Protea can provide support for the atmoStation alongside any CEM analyser hardware, meaning the customer has a single source of support for hardware and reporting software. Protea are best placed to ensure the entire emissions system is fit-for-purpose, being able to make changes to the analyser and the reporting software as and when needed e.g. range changes.

Maintenance contracts for AC-DC are provided as add-ons to the service contracts for the CEM, so costs can be reduced in terms of separate call out charges.

Facilitating remote access to the atmoStation system is standard practice, and Protea can provide permanent 4G router connection to the reporting system to help support the application.

Figure 7: Protea offers complete support for CEM and DAHS direct or through our Distributors.

Protea Distribution

Protea operate a worldwide distributor and customer support network guaranteeing that our customers receive outstanding support both before and after sale. All our distributors have factory trained service engineers to support our products.

Supplier:

mCERTS
Sira MC 200354/00
AC/DC software

ISO 9001:2015
Management
System
www.zuv.com
ID. 9108637504

This Datasheet is a guide to the product and Protea Ltd reserve the right to modify the product without notification.

Figure 4: *Dynamic time-weighted average tables.*
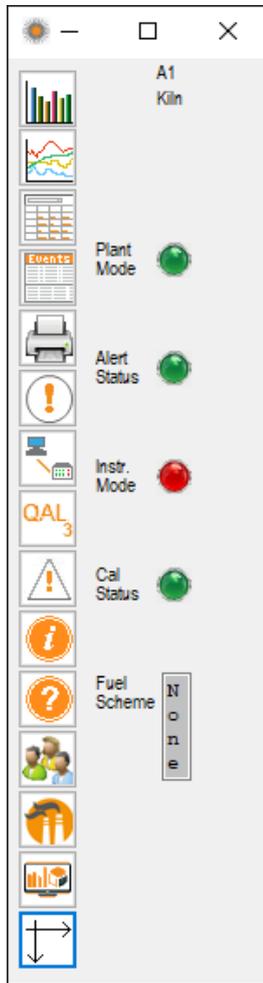
Figure 8: *Simple Single Button Control Panel for all software functions.*

Figure 9: *Report Module gives wide and flexible reporting options.*

Figure 10: *QAL3 Control Charts: CUSUM Drift, CUSUM Precision and Shewhart available in AC-DC.*
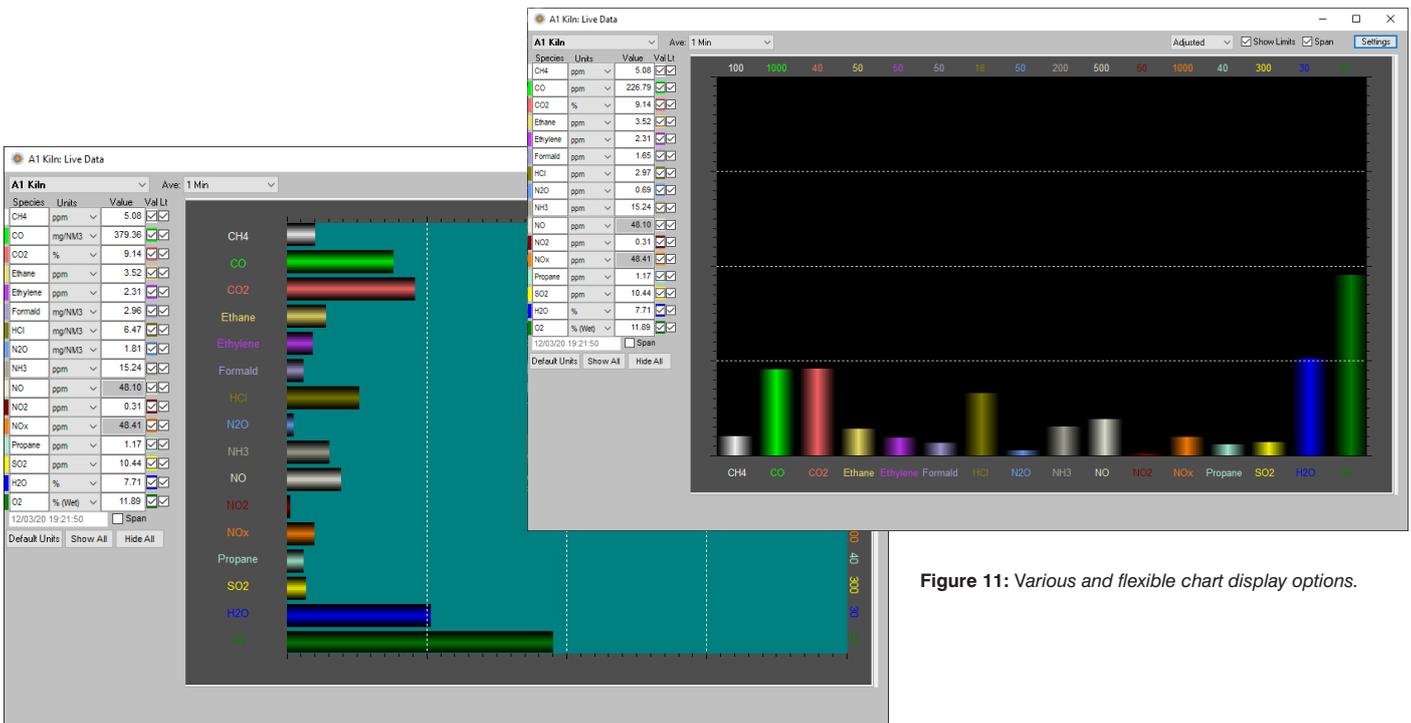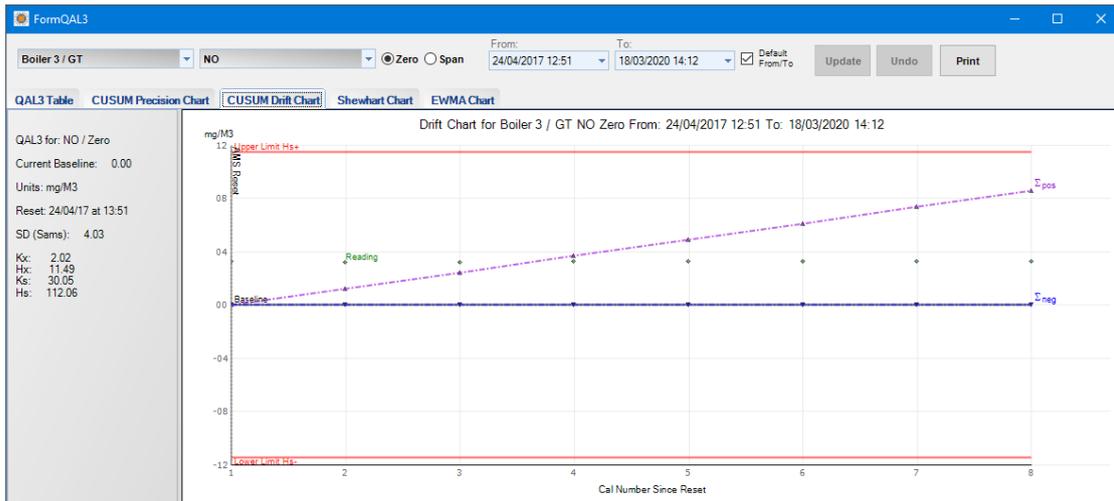
Figure 11: *Various and flexible chart display options.*