Fireworks Windows Software

Kane's new Fireworks software is the easiest way to see data from your Quintox on a PC. You can transfer data from the handset, see data in "real-time" or see previously stored data.

Fireworks uses Windows software giving full flexibility to view, manage and report on boiler performance and emissions data. Producing graphs or reports takes the press of a button.

Fireworks lets you make professional reports for your customers or your records. In addition standard reports can be customised, for example:

- Boiler emissions - Compute automatically outputs per year of CO, CO^2, Nox and SO^2.
- Boiler performance - Create "Before & After" reports to show boiler performance & efficiency improvements after servicing.
- Boiler spot check - Ideal for a simple record of all boiler parameters.

Connect the Quintox RS232 port to your PC's serial port to view data in "real-time", updated every second - Perfect if you use a laptop PC to view boiler performance data.

After you have viewed your data you can store it for reference or make reports.

You can also see stored files on your PC or transfer data stored in the Quintox handset via the PC serial port.

Sample Screen 1

Graph data in "real-time", from logged data in the handset or from a previously stored file.

Sample Screen 2

Shows data in 25mm high characters - ideal for training or for monitoring in "real-time".

Sample Screen 3

Either run a report showing pollution emissions converted to daily, monthly and early figures or run before and after tuning reports to show efficiency improvements.

• Take data from your Quintox in "real-time", from the handset or from a PC file. • See "real-time" or stored data in graphs or tables in Windows format. • View data in table format. • Export to a Spreadsheet. • Print boiler performance, safety and emissions reports. • Display data in large format - Ideal for training.

KM9106

Order Code KM9106CO

Case and Carry Strap, Hand Held Remote Unit, Oxygen Sensor, CO Sensor (H2 compensated), Battery Charger, Water Trap, SO^2 Filter, 5m/15ft Extension Lead and 2 Paper Rolls.

Ambient Operating Range	Temperature +0°C to +40°C / 32-104°F Humidity 20% to 80% RH non condensing
Maximum gas temperature at sensors	Continuous + 40°C / 104°F Intermittent + 55°C / 130°F
CO2 range / accuracy	0 to 20% ±0.3% (calculated)
Battery Power	12V 2.6 Ahr, (8 hours operation with pump on from full charge)
Mains adaptor / charger	Input 110 Vac or 230 Vac nom Output 16 Vac at 1 Amp
Flue gas probe hose and thermocouple plug	Stainless steel shaft with rubber handle; 5m / 15ft neoprene
Temp, accuracy	±0.3% ±1°C / °F
Probe dimension (Shaft)	8mm (5/16") diameter
Pre-programmed UK fuels	Natural Gas, Natural Gas 2, Gascor, Town Gas, Light Oil, Heavy Oil, Propane, Butane, Anthracite, Coke, Coal

Programmable to work with other fuels Worldwide.

	Main Unit	Hand Set
Length	450mm / 18"	220mm / 8.5"
Width	230mm / 9"	55mm / 2"
Height	300mm / 12"	120mm / 5"
Complete Case weight	9.5Kg / 21 lbs	

Sensors Supplied as Standard:-

Sensor	Gas	Range	Resolution	Accuracy
OS11+	O2	0-25%	0.1%	-0.1% +0.2%
KMCO1	CO*	0-10,000ppm	1ppm	20ppm ‹400ppm ± 5% ‹2000ppm ±10% ›2000ppm

+With 2 year guarantee. *H_2 compensated, plus filter to reduce sensitivity to NO, NO_2 and SO_2

Quintox Sensors Options and Specifications:-

Order Code	Gas	Range	Resolution	Accuracy
KMNO1	NO	5000ppm	1ppm	±5ppm <100ppm ±5% >100ppm
KMNO2	NO_2	1000ppm	1ppm	±5ppm <100ppm ±5% >100ppm
KM3SO2	SO_2	5000ppm	1 ppm	±5ppm <100ppm ±5% >100ppm
KM6CO1	CO %	10%	0.01%	±500ppm <1% ±5% >1%
KMPS2	Diff. Pressure	±150mbar	0.01mbar	±0.05 full scale
KMHC104	CO_2 and	20%	0.01%	±7% of reading ±0.4%
	HC	3000ppm propane	10ppm	±7% of reading ±30ppmv

All gas specifications quoted using dry calibration gases at STP

Quintox Accessories

Order Code		Length	Max Temperature
KMCP6	Standard Flue Probe	300mm/12"	600°C/1112°F
KMCLP6	Standard Long Flue Probe	1000mm/36"	600°C/1112°F
KMCHP6	High Temperature Probe	300mm/12"	1100°C/2140°F
KMCHLP6	Long High Temperature Probe	1000mm/39"	1100°C/2140°F
KMCSP6	Standard Smoke Probe	300mm/12"	600°C/1112°F
KMCHSP6	High Temperature Smoke Probe	300mm/12"	1100°C/2140°F
KMCHLSP6	Long High Temp. Smoke Probe	1100mm/43"	1100°C/2140°F
KA16	Ambient Air Probe	250mm/10"	600°C/1112°F
KMCDPP6	Gas/Pressure Probe	300mm/12"	600°C/1112°F
WTS9106P	Automatic Water Trap		
KM9106PUR	Main Purge Installation		
KM9106HPUR	High CO Purge		

Replacements for all consumable parts are available.

KM9108

Order Code KM9108/230 or KM9108/110

Stack mounting head, power supply/control unit, connecting cable, extension hose and thermocouple extension cable. Cable and hose lengths are 5 metres nominal length. Other lengths on request.

Ambient Operating Range	+5 to +40°C / 41 to 104°F
Maximum gas flow rate	2.5L/min
Chiller nominal temperature	+5°C / 41°F
Readiness	Typically 5 mins.
Power Supply	230 Vac 50Hz or 110 Vac 60Hz
Extraction Head: Dimensions	200mm x 140mm x 200mm (8"x5.5"x8")
Weight	2.2Kg / 5lbs
Power & Control: Dimensions	210mm x 125mm x 290mm (8.5"x5"x11.5")
Weight	3.5Kg / 8lbs

Kane International Limited specialise in the design, manufacture and marketing of electronic instruments for monitoring and optimising energy usage and emissions from energy processes. Our policy is to continuously develop our products and so we reserve the right to change any part of our product specifications without prior notice.

WARRANTY - All Kane International Limited products are warranted for 12 months from the date of purchase. This warranty covers any defects in materials or manufacturing and applies worldwide.

CE URS UKAS ENVIRONMENTAL MANAGEMENT 043-C URS UKAS QUALITY MANAGEMENT 043-A

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Gas Emissions

Monitoring and Analysis

KM9106
Quintox Gas Analyser

KM9108
Gas Conditioning Unit

Fireworks
"Real-time" software

Kane Quintox

Portable Gas Analyser
and Emissions Monitor

The KM9106 Quintox has established itself as the most cost effective and versatile portable analyser. From its most basic form as a boiler tuning analyser it provides a versatile and cost effective platform that allows enhancements up to a fully portable semi-continuous emissions monitoring system.

Standard product KM9106CO measures:

- Oxygen
- Carbon Monoxide
- Flue Temp
- Ambient Temp
- Inlet Temp (probe optional)

Calculates:

- Efficiency (nett and gross)
- Nett temperature
- Date and Time
- Excess air
- Lambda
- Losses
- CO/CO_2 ratio
- Poison Index
- Oxygen sensor life
- Battery life
- Carbon Dioxide

Standard features include:

- Oxygen sensor with 2 years warranty
- Hydrogen compensated CO sensor with internal filtering that operates to 10.000 ppm
- Automatic cross sensitivity compensation between toxic gas sensors
- Powerful extraction pump that produces 500 mBar of suction
- Pump on/off control via handset.
- Tough handset with tactile keypad and internal data store
- Stores 1926 boiler tests within the handset
- Integral plain paper printer for immediate record keeping
- User defined printouts for customised reports
- Timed print and/ or data store facility for automatic record keeping
- Fully upgradeable

Optional features include:

WTS9106P

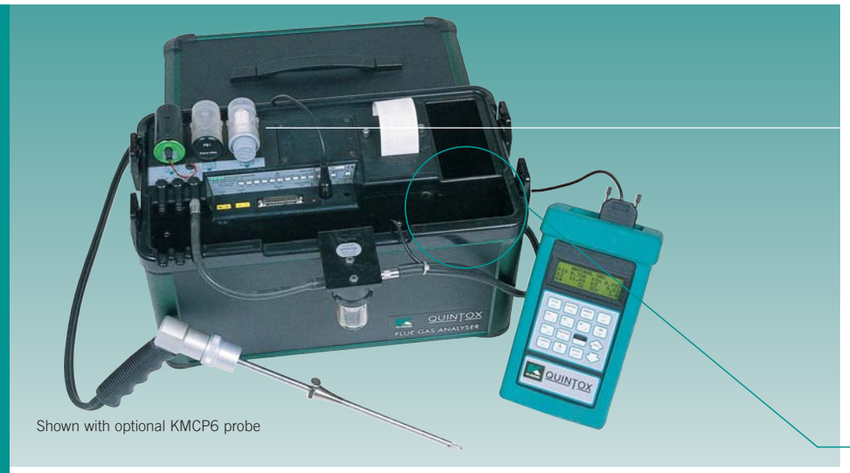
Automatic water extraction to eliminate the risk of an overflowing water trap.

KM9106PUR

Main purge solenoid to facilitate regular automatic fresh air purging to refresh the electrochemical sensors whilst long term monitoring.

KM9106HPUR

Changeover solenoid and purge pump to allow automatic switching between low and high range CO sensors. This provides protection for the standard CO sensor in situations where controlled combustion has not been established eg; during boiler commissioning. The high CO sensor is rated to 10%.



Shown with optional KMCP6 probe

Features:-

Rugged combustion probe with detachable stainless steel shaft, incorporating integral thermocouple. A comprehensive range of probes is available, allowing smoke measurement, higher temperatures and longer shafts.

Features:-

Clear, backlit, 4 line display. Displays preset pages or personally configured individual screens.

Tactile keypad - simple to use.

Handset stores up to 1926 boiler tests.

Handset can download direct to PC.

Remote handset with protective rubber boot.

Reference toxic gas readings

When taking toxic gas readings to comply with a regulatory body, you normally have to reference them to a certain oxygen level.

The Quintox will automatically display to a specific reference in either ppm or mg/m³.

```
*** KANE-MAY ***
** KM QUINTOX **

DATE     21-05-02
TIME     13:20:58

   NATURAL GAS

O2    % .... 12.4
CO    PPM ... 201
Prs   mBar    0.06
EFF   % (N)   93.7
XAIR  % ..... 145
CO2m  % .... 0.2
CO/CO2 R  0.1005
PI      ... 10.05

NO    PPM ..... 0
NO2   PPM ..... 0
NOx   PPM ..... 0
SO2   PPM ..... 0
CxHy  PPM..... 0

NETT .. C    76.0
FLUE .. C    99.3
INLT  NOT FITTED
AMBIENT  C   23.3
```

This type of referencing is sometimes termed as 'diluted and undiluted readings' or 'oxygen free readings' when referencing to zero O_2.

Tune for maximum efficiency

All combustion parameters are shown on the handset's large 4 line display, to allow the operator to see changes to boiler settings instantly.

Each line of the display can be configured for Oxygen, Carbon Monoxide, Carbon Dioxide, Efficiency, Flue and Nett Temperature and Excess air.

Over 70 different fuels are programmed into the Quintox to allow it to calculate values all over the world. A custom fuel option is also built-in to accommodate those fuels not yet established.

```
NOX   PPM .....  70
NO    PPM .....  65
CO    PPM .....  69
NETT  (F) ....  390
```

```
O2    %   .....  5.1
CO    PPM .....  69
CO2   %   ..... 12.0
NETT  (C) ....  199
```

Long Term Monitoring

When monitoring for long periods with any analyser that uses electrochemical sensors a regular fresh air purge routine needs to be implemented. This helps maintain the chemical balance in the sensors and helps to protect them for either drying out, if being used with a gas preparation unit, or becoming too wet if being used with a standard probe extraction system.

The KM9106 Quintox can be upgraded with the addition of both Main Purge and an Auto-draining water trap.

Main Purge: KM9106PUR

This internal upgrade allows automatically timed fresh air purges on all the sensors so that they are regularly refreshed.

Auto-Drain: WTSS9106P

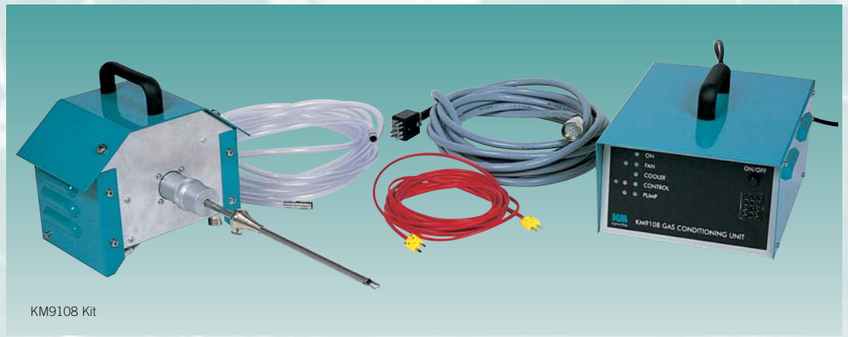
This external upgrade can be fitted at any time and provides on-going protection from an overflowing water trap. This upgrade is an absolute requirement for any unattended or long term monitoring.

The auto-draining is achieved using an intermittently timed peristaltic pump.

Further protection is provided by a high level switch which when activated caused the sampling pump within the KM9106 to be switched off.

Features:-

- Easy access to filters and sensor.
- Integral printer for instant records.
- Water trap mounts on the outside for easy viewing.
- Quintox measures flue and inlet temperature simultaneously.



KM9108 Kit

Quintox Upgradability

The improved gas manifold design gives a faster response time and allows the following gases to be measured.

CO — Carbon Monoxide:- Vital when boiler tuning. A deadly poisonous gas.

O_2 — Oxygen:- Indicator of efficiency and allows a calculation of CO_2 (Carbon Dioxide).

NO — Nitric Oxide:- One of the main gases causing acid rain. The requirement to measure is growing.

NO_2 — Nitrogen Dioxide:- Cause of acid rain. If accurate NO_2, is required, then NO_2 should be measured.

SO_2 — Sulphur Dioxide:- Also cause of acid rain. If fuel has high Sulphur content then SO_2 should be measured.

Pressure — Pressure/Draft To measure boiler draft or differential pressure. Calculate flow with a pitot tube.

CO_2 — Carbon Dioxide Greenhouse gas that is the major target for emissions reduction.

HC — HydroCarbons The unburnt elements of any fuel carried out with exhaust gases.

High CO — High Carbon Monoxide Produced when combustion is not being properly controlled.

Main Purge — Main Purge Refreshes the electro-chemical sensors during long term monitoring.

Auto Drain — Auto Drain Automatically empties the water trap during long term monitoring.

High CO Purge — High CO + Purge Pump Provides protection for the standard CO sensor.

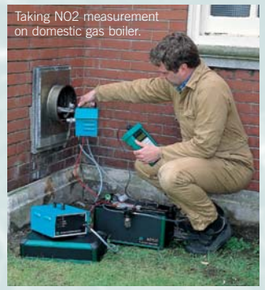
Probe — Probes Standard 300mm or 1m.

Probe — Probes High temperature 300mm or 1m.

Probe — Probes Smoke 300mm or 1m.

Probe — Probes High temperature smoke 300mm or 1m.

Probe — Probes Specials on request.


Taking NO2 measurement on domestic gas boiler.

Accurate emission data on easy to read display.

Gas Preparation

Using a normal gas analyser the hot flue gas cools as it travels along the hose and the water vapour in the gas condenses. Both the hose and the water trap then provide 'wetted' surfaces. Certain gases are soluble in water. Both SO_2 and particularly NO_2 are such gases. Unless precautions are taken erroneous readings may result.

The gas preparation unit flash chills the sample gas to around 2˚C so that the water vapour condenses under controlled conditions. Because the surface area of the chilled chamber is small and the residence time of the sample gas is low, there is little time for gases to be absorbed in the condensate and so more accurate samples are taken. When the gas leaves the chamber it naturally re-heats to ambient temperature which needs to be above 2˚C so that no further condensation can occur.

KM9108

The KM9108 differs from most gas preparation units in that it does not need a heated line. Heated lines are used to keep gases hot until they reach the chilled chamber but they are cumbersome and difficult to use especially at height.

The novel design used in the KM9108 extracts gas directly from the flue into the chilled chamber. This eliminates both the cost and complexity of the heated line and allows faster on-site set up.

High level extraction.

Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.

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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.