

KANE450

it's easy with Kone



CO NO CO₂

CO/CO₂ Ratio

Temp

Pressure

Features

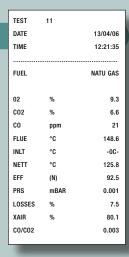
Four line backlit display controlled by rotary switch

X-Air

- Protective rubber sleeve with integral magnet for "hands free" use
- 02, CO, CO2, CO/CO2 ratio, temperature and efficiency readings
- Multi-fuel (natural gas, propane, butane, LPG, 28/35 sec oils)
- High accuracy differential manometer with resolution to 0.001 mbar with range to ± 80 mbar
- Differential thermometer for flow / return / ΔT (using optional Type K thermocouple probes)
- Hold, store and auto-store readings
- Reports include combustion test, tightness test, CO build-up and differential temperature
- Infra-red output to optional printer
- Torch light and backlit display
- Designed to meet BS7967
- 5 year extended warranty if serviced annually by Kane

Optional Extras

- Gas leak detector
- 0-4,000 ppm C0 sensor with H₂ compensation - standard in UK
- 0-1,000 ppm or 0-100 ppm NO sensor
- A range of Type K thermocouple probes
- 2 psi ± 160 mbar pressure sensor
- Bluetooth™ data transfer
- KMIRP infra-red thermal paper printer
- KANE ImPrint infra-red plain paper printer
- NiMH rechargeable batteries
- 220v fast charger
- 12v in-vehicle charger







KANE450 Reports

AUTO STORE ~ (stores up to 255 tests)

From the menu select STORE, AUTO STORE, YES.

Set the time interval (in seconds) between logs. The analyser starts logging as soon as you exit the menu and stops when you select STORE, AUTO STORE, NO.

To view the results select STORE, VIEW, then enter the log number required. Use the rotary dial and line selector to view the readings as normal. Use scroll up/down to view other log numbers.

To delete select DEL ALL, YES

TEST	11
DATE	03/08/05
TIME	16:27:32
FUEL	NATU GAS
02 %	9.3
CO2 %	6.6
CO ppm	21
FLUE °C	148.6
INLT °C	-OC-
NETT °C	125.8
EFF (N)	92.5
PRS mBAR	0.001
LOSSES %	7.5
XAIR %	80.1
CO/CO2	0.003
	etc.

PRESSURE ~ (stores up to 8 tests)

From the menu select REPORT, PRESSURE, TEST.

Press the "Pump" key to zero the pressure sensor.

CONNECT the pressure hose to pressure connection P1.

Press "Enter" to start the $1\ \mbox{minute stabilization}$ period.

Press "Enter" again to start the 2 minute tightness test.

To view the results select REPORT, PRESSURE, VIEW.

Use scroll up/down to view other log numbers.

To exit press "Enter". To delete select DEL ALL, YES



TEMPERATURE ~ (stores up to 8 tests)

From the menu select REPORT, TEMP, TEST. CONNECT the thermocouples, "flow" to T1, "return" to T2.

Press "Enter" once to view readings and once more to log.

To view the results select REPORT, TEMP, VIEW. Use scroll up/down to view other log numbers.

To exit press "Enter". To delete select DEL ALL, YES



ROOM CO ~ (stores up to 8 tests)

IEMP IEST

TIME 16:37

RETURN °C

03/08/05

48.3

39.7

8.6

etc.

LOG

NETT

From the menu select REPORT, ROOM CO, TEST.

The pump will run and the analyser will log the CO reading every minute for 15 minutes.

To view the results select REPORT, ROOM CO, VIEW.

Use scroll up/down to view other log numbers.

Use "Enter" to view each reading within the ROOM CO TEST

To exit use rotary switch.
To delete select DEL ALL, YES



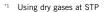


KANE450 Features and Benefits

Feature	Benefit	
Rotary switch	Quick and easy to use	
Large display with backlight	Clear and easy to read	
4 line display	Any four parameters can be selected and displayed using the rotary switch	
Multifuel	Test any boiler using Natural Gas, Light Oil, Propane, Butane, LPG	
Efficiency calculations include Nett, Gross and Condensing	Suitable for all boilers including condensing	
High accuracy pressure sensor with quick zero function and fast/slow response settings.	Ideal for flue draught tests, let-by tests, tightness tests and checking air/gas ratio valves as it measures differential pressure to 0.001 mbar resolution.	
Measures differential temperature (using optional Type K thermocouple probes)	Accurately checks flow, return and differential temperatures simultaneously	
"Quick start" feature for temperature and pressure readings	Saves time when you don't need flue gas analysis	
Infra-red output to printers	Thermal or impact printer available. Printout includes two line header, date/time.	
Instant one button printout	Quick and easy to print test results	
Instant one button logging	Quick and easy to log test results	
Reports feature	Combustion logging Tightness Test – complies with IGE/UP/1B CO room build up – complies with BS7967 Temperature report – ideal for Benchmark	
Optional Bluetooth upgrade	Download results direct to a PC or PDA	
4 x AA alkaline batteries	Battery life typically more than 12+ hours	
NiMH rechargeable battery option	12 v "in car" charger. No more flat batteries!	
Rubber boot with integral magnet	Provides extra protection and "hands free" operation	
Task light	Never got a torch when you need one? You have now!	
Optional H compensated CO sensor	Increased CO range, 0-4,000ppm fitted as standard in UK. Fast recovery from overranging.	
Optional NO upgrade	Includes low range 0-100ppm	
Optional Leak Detector	Easy to detect gas leaks	
Low running costs	As standard!	

KANE450 ANALYSER SPECIFICATION (NOTE: MAY BE SUBJECT TO CHANGE)

	Parameter	Range	Resolution	Accuracy		
	Temp Measurement					
	Flue Temperature	0-600°C (0-1200°C with special probe)	0.1°C	$\pm 1.5^{\circ}\mathrm{C}$ or $\pm 1\%$ reading		
	Inlet Temperature	special probe,				
	(Internal sensor)	0-50°C	0.1°C	±1.0°C		
	(External sensor)	0-600°C	0.1°C	$\pm 1.5^{\circ}\mathrm{C}$ or $\pm 1\%$ reading		
	Gas Measurement					
ı	Oxygen	0-21%	0.1%	±0.2% *1		
	Carbon Dioxide*2	0-30%	0.1%	<u>+</u> 0.3%		
	Carbon Monoxide (KANE450CO)	0-2,000ppm nom 4,000ppm max for 15 mins	1ppm	±2ppm <20ppm ^{*1} ±5ppm <100ppm ±5% reading >100ppm		
	(KANE450COH) (hydrogen compensated)	0-4000ppm	1ppm	±5ppm <100ppm*1 ±5% reading >100ppm		
	Nitric Oxide (NO low range)	0-100ppm	1ppm	±2ppm <30ppm*1 ±5ppm <100ppm		
	(NO high range)	0-1000ppm	1ppm	±5ppm <100ppm*1 ±5% reading >100ppm		
	Calculated values *3					
	Efficiency	0-99.9%	0.1%			
	Excess Air	0-250%	0.1%			
	CO/CO ₂ ratio	0-0.9999	0.0001			
	Pressure (differential)					
	Nominal range ±80 mbar (Maximum over range	<u>+</u> 0.2 mbar	0.001 mbar to	<u>+</u> 0.005 mbar		
	without damage to sensor is +400 mbar)	±1 mbar	24.999 bar then	<u>+</u> 0.03 mbar		
		<u>+</u> 80 mbar	1.01 mbar	±3% of reading		



^{*2} Derived from O₂ measurement

^{*3} All calculations in accordance with BS EN50379 approval.

Pre-programmed Fuels	Natural gas, Propane, Butane, LPG, Light Oils (28/35 sec), Wood Pellets	
Storage Capacity	99 Combustion tests 20 Pressure tests 20 Room CO tests	
Ambient Operating Range	0°C to +45°C 10% to 90% RH non-condensing	
Battery Type / Life	4 AA cells >12 hours using Alkaline AA cells	
Chargers (optional)	220v charger, for NiMH batteries only 12v in vehicle charger, for NiMH batteries only	
Dimensions		
Weight:	0.8kg handset with protective cover	
Handset:	200 x 45 x 90mm	
Standard Probe:	300mm long including handle. 6mm diameter x 240mm long stainless steel shaft with 3m long neoprene hose. Type K thermocouple.	

Using The Menu

Select "Menu" on the rotary switch and navigate using the function buttons...



△ = Scroll up ▽		= Scroll down = Enter
Main Menu	Sub Menu	Options / Comments
SETUP	SET FUEL	NAT GAS, L OIL, PROPANE, BUTANE, LPG
	$N \leftarrow C \rightarrow G$	Select the combustion efficiency calculation required ~ N = nett eff, G = gross eff, C = for condensing boilers
	SET TIME	Uses "Military" time. 7am = 07:00, 7pm = 19:00
	SET DATE	DD-MM-YY, MM-DD-YY
	$C \leftarrow \rightarrow F$	°C, °F
	$PPM \longleftarrow \to MG$	PPM, MG/M ³
	02 REF	NO, YES
	LANGUAGE	Various Languages
PRESSURE	SMOOTH	OFF = fast response. ON = slow response
	RESOLVE	HIGH, LOW, selects the number of decimal places
	PS UNITS	$\begin{array}{c} {\rm mBar,\;mmH_2O,\;Pa,\;kPa,\;PSI,\;mmHg,\;hPa,} \\ {\rm InH_2O} \end{array}$
STORE	VIEW	View logged readings
	AUTO STO	See KANE450 REPORTS page
	DEL ALL	NO, YES
REPORT		See KANE450 REPORTS page
SCREEN	CONTRAST	Factory setting is 04
	AUX	User selectable parameters
	HEADER	Sets printout header, 2 lines, 20 characters per line