KANE 458s Flue Gas Analyser with direct CO₂ measurement and CO sensor protection



Stock No: MAN00099 Rev: 0.00000

JULY 2020

© Kane International Ltd

CONTENTS

Page No.

KANE 458s OVERVIEW	4-5
INSTRUMENT FEATURES & KEYPAD	6-9
FUNCTION KEYS	7
ANALYSER LAYOUT	8
BACK OF ANALYSER - PROBE ETC	9
BATTERIES	10
BATTERY TYPE	10
REPLACING BATTERIES	10
TIME AND DATE	10
CHARGING NIMH BATTERIES	10
BATTERY DISPOSAL	10
GENERAL SAFETY	11
USING YOUR KANE458s FOR THE FIRST TIME	12-13
USING YOUR KANE458S EVERY TIME	12
FRESH AIR OURGE ON SWITCH ON	12-13
USING THE MENU	14-16
MEASURING FLUE GASSES	16
CO PROTECTION PUMP OPERATION	17
USING YOUR ANALYSER	18-19
COMBUSTION TESTS	18
RATIO DISPLAY	18
02/EFF DISPLAY	19
AUX DISPLAY	19
TRANSFERING RESULTS	19-21
TO VIEW / PRINT A LOGGED RESULT	20
VIEWING / PRINTING A LOGGED COMBUSTION TEST	20
KANE INFRARED PRINTER	20
PRINTOUTS	20
COMMISSIONING TEST	22
PRESSURE & TEMPERATURE TESTING	23-24
PRESSURE MEASUREMENT GOOD PRACTICE	24

LARGE BORE TUBING ISSUES	24
LET-BY & TIGHTNESS TESTING	25-26
ROOM CO TESTING TEST TYPES ROOM CO DISPLAY	27-28 27 28
USING YOUR KANE458s AS A THERMOMETER OR PREA METER	SSURE 27-28
ANALYSER PROBLEM SOLVING	29
SPECIFICATIONS	30-31
EU DECLARATION OF CONFORMITY	32
SERVICE – CALIBRATE - RECERTIFY KANE ASSET MANAGER (KAM) GUARANTEED SAME DAY DESPATCH WHERE TO SEND YOUR ANALYSER COLD WEATHER PRECAUTIONS	33-37 34-35 36 37 37

KANE 458s OVERVIEW

Your KANE458s combustion analyser measures:

- Carbon Monoxide (CO)
- Carbon Dioxide (CO₂)
- Oxygen (O2) if fitted
- Nitric Oxide (NO) if fitted
- Differential Pressure
- Differential temperature

Your KANE458s measures CO2 using KANE's unique NDIR sensor.

Always use fresh outdoor air to "zero" your analyser during the initial countdown or when prompted to "ZERO CO" as indoor CO2 levels are increased by human activity.

This applies even if your analyser measures O2 instead of CO2 as it is best practice to use fresh, outdoor air during initial countdown to protect you from unsafe levels of CO and CO2 possibly present in the room.

Depending on your options these parameters are calculated:

- Oxygen (O2)
- CO/CO₂ ratio
- Carbon Monoxide (CO₂)
- Combustion Efficiency
- Losses
- Excess Air
- Differential Temperature

Your analyser also measures CO levels in ambient air – useful when a CO alarm is triggered – & performs a Room CO test for up to 30 minutes.

Your KANE458s has a structured Commissioning Test to help install boilers.

Your KANE458s has a protective rubber cover with magnets for "hands-free" operation and is supplied with a flue probe with integral temperature sensor.

Your analyser has a low flow detector to switch off the analyser's pump if it detects an over filled water trap.

Your KANE458s has a large 6 line display showing data & test results based on your actions.

Your KANE458s can send test results to our optional KANE IRP-2 infrared printer or KANE's wireless printer App.

The memory can store up to:

- 60 combustion tests
- 20 AUX tests
- 20 let-by/tightness tests
- 20 temperature & pressure tests
- 20 room CO tests
- 20 commissioning Tests

You can personalise 2 lines of 16 characters on your test results header - for example your company name & telephone number.

ANALYSER FEATURES AND KEYPAD



KANE458s BUTTONS

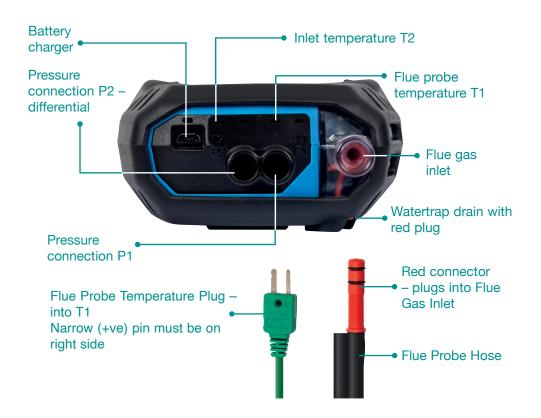


Function keys

ICON	DESCRIPTION ICONS				
	Save log – long press to store data				
	Print report – short press to enter a print or wireless data transfer				
	Navigate up – short press to scroll up				
	Enter key – used to select current option				
	Navigate down – short press to scroll down				
	Data hold – short press to hold current data on screen				
	Pump toggle – long press to switch pump on & off				

ANALYSER LAYOUT







Thermocouple •

Stainless Steel •

Depth Stop Cone •

Gas Path -

Shaft

KANE 458s MANUAL 9

BATTERIES

BATTERY TYPE

Your KANE458s uses rechargeable Nickel Metal Hydride (NiMH) batteries - using other battery types may void your KANE458s' warranty.



Although you can use Alkaline batteries you must not charge your analyser with Alkaline batteries fitted.

Do not mix NiMH batteries of different capacities or from different manufacturers – all must be identical.

REPLACING BATTERIES

Turn over your analyser and remove its protective rubber cover. Open the battery compartment & fit 3 NiMH "AA" rechargeable batteries – check battery polarity is correct. Replace battery cover & protective rubber cover.

TIME AND DATE

After changing the batteries reset your analyser's time & date.

CHARGING NIMH BATTERIES

Your KANE458s uses a standard Micro USB connector for charging (KANE part No: USB1).

For best results turn off your analyser then connect your charger – the charging indicator illuminates and turns off when charging finishes.

Your first charge should be for 8 hours continuously – thereafter NiMH batteries can be topped up at any time, even for short periods.

If the analysers batteries discharge & the analyser enters a 'low power shut down' a 1 hour charge will provide approx 2 hours continuous use.

BATTERY DISPOSAL

Always dispose of depleted batteries using approved disposal methods that protect the environment.

GENERAL SAFETY

This analyser extracts combustion gases that may be toxic in relativity low concentrations. These gases are exhausted from the bottom of the analyser. This analyser must only be used in well-ventilated locations by trained and competent persons after due consideration of all the potential hazards.

Portable gas detector users should conduct "bump" test before relying on the unit to verify an atmosphere is free from hazard.

A "bump" test is a way to test an instrument works within acceptable limits by briefly exposing to a known gas mixture that change the output of all the sensors present.

Note: This is different from a calibration where your analyser is also exposed to a known gas mixture but is allowed to settle to a steady figure and the reading adjusted to the stated gas concentration of the test gas.

Protection Against Electric Shock (In accordance with EN 61010-1: 2010):

This analyser is designed as Class III equipment and should only be connected to SELV circuits. The battery charger is designated as:

- Class II equipment
- Installation category II
- Pollution degree 2
- Indoor use only
- Altitude to 2000m
- Ambient temperature 0°C-40°C
- Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50%RH at 40°C
- Mains supply fluctuations not to exceed 10% of the nominal voltage

Your analyser's protective cover is fitted with strong magnets – magnetic fields can cause damage to magnetic storage media. Certain electronic devices are sensitive to magnetic fields and may be damaged permanently if exposed to a strong magnetic field.

USING YOUR KANE458s FOR THE FIRST TIME

Charge your analyser's batteries for 8 hours – an overnight charge should be sufficient for an average 8-hour day.

Take time to read this manual fully & be aware your analyser's configuration may not support all features detailed in this manual.

Take time to set up your requirements before using your analyser.

USING YOUR KANE458s EVERY TIME:

Check your analyser's water trap is empty & particle filter is not dirty.

To empty, pull out the red plug, shake out water & replace red plug.

To change the particle filter, remove protective rubber cover, slide the water trap from analyser, remove particle filter from its spigot & replace.

Reconnect your analyser's water trap & rubber protective cover.

Connect your flue probe hose to your analyser's flue gas inlet – see p.8.

Connect your flue probes temperature plug to your analyser's T1 socket – check plug orientation is correct – See p.8.

FRESH AIR PURGE ON SWITCH ON

Your analyser starts a zero countdown to auto calibrate itself. When finished, rotate dial to "RATIO" – In fresh air CO reading should be zero.

Rotate dial to "O2/EFF" – In fresh air O2 readings should be 20.9% + 0.3%.





This message says your analyser must be reset in fresh air.

Place your analyser in outdoor fresh air, press 🖛.

You can perform a manual "ZERO" any time – rotate dial to "RATIO" & hold down the ▼ button to see the message above.

USING THE MENU

Rotate dial to "Menu" and navigate using the function buttons:

▲ = SCROLL UP \forall = SCROLL DOWN \Leftarrow = ENTER

NOTE: To exit MENU rotate dial to any position – any changes not entered will not store.



As you scroll up or down, the side LEDs illuminate to point to the active line

MAIN MENU	SUB MENU	OPTIONS/COMMENTS
	LANGUAGE	ENGLISH
	SET TIME	HH:MM:SS format e.g. 7 am = 07:00:00, 7pm = 19:00:00
	SET DATE	DD/MM/YY format
SETUP	REPORTS	
	PRINTER	KM IRP KANE IRP-2 WIRELESS SERIAL
	BACK	

MAIN MENU	SUB MENU	OPTIONS/COMMENTS	
	FUEL TYPE	NAT GAS, TOWN GAS, COKE GAS, PROPANE, BUTANE, LPG, LIGHT OIL, BIO OIL, WOOD PELLETS, BIO GAS, USER FUEL 1 TO 5	
	FUEL ORIGIN	UK, FRANCE, SPAIN, N AMERICA, BELGIUM, NETHERLAND	
	EFFICIENCY	GROSS, NET, GROSS COND, NET COND	
	PRESSURE	SEE NEXT TABLE BELOW	
UNITS	GAS	PPM, PPM(N), MG/M3, MG/M3(N), MG/ KWH, MG/KWH(N)	
	TEMP	C , F	
	02 REF	UP/DOWN TO SET VALUE (3% DEFAULT)	
	NOX CALC	UP/DOWN TO SET VALUE (5% DEFAULT)	
	BACK		

MAIN MENU	SUB MENU	OPTIONS/COMMENTS
	FILTER	OFF = normal response. ON = slower (damped) response
	RESOLUTION	LOW = e.g. 0.01mbar resolution. HIGH = displays to an extra decimal place
	UNITS	mbar, Pa, PSI, mmHg, hPa, inH2O, mmH20, kPa, psi
PRESSURE	TIME	LET BY = Set duration of let-by test in minutes. Default = 1 minute
	PRINTER	STABIL'N = Set duration of stabilisation in minutes. Default = 1 minute
	PASS KEY	TIGHTN'S = Set duration of tightness test in minutes. Default = 2 minute
	BACK	

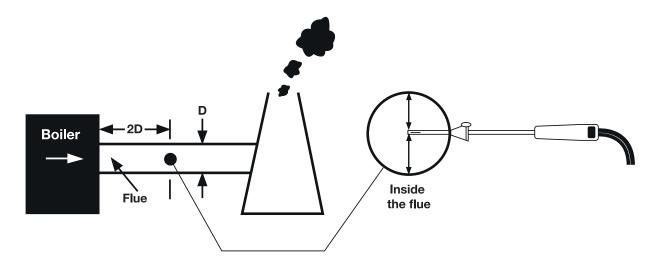
MAIN MENU	SUB MENU	OPTIONS/COMMENTS
	CONTRAST	Factory setting is 14
	BACKLIGHT	0 to 300 secs
SCREEN	AUX	Enables users to customise the parameters on the AUX display: LINE 1, LINE 2, LINE 3, LINE 4, LINE 5, LINE 6, BACK
	BACK	

MEASURING FLUE GASSES

After the countdown is finished and the analyser is correctly set up, put its flue probe into the appliance's sampling point. The tip of the probe should be at the centre of the flue. Use the flue probe's depth stop cone to set the position.

With balanced flues, make sure the probe is positioned far enough into the flue so no air can "back flush" into the probe.

Ensure the flue probe handle does not get hot!



Make sure you do not exceed the analyser's operating specifications. In particular:

- Do not exceed the flue probe's maximum temperature (600°C)
- Do not exceed the analyser's internal temperature operating range

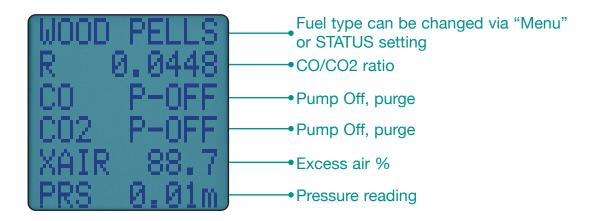
- · Do not put the analyser on a hot surface
- Do not exceed the water trap's levels
- Do not let the analyser's particle filter become dirty and blocked

Look at your analyser's displayed data to ensure stable operating conditions are achieved & readings are within expected range.

CO PROTECTION PUMP OPERATION

Your analyser's CO sensor is automatically protected from high levels of CO. When levels of CO rise above 2000ppm the analyser's pump stops and its CO purge pump starts.

Your analyser displays P-OFF until CO level falls below 2000ppm.



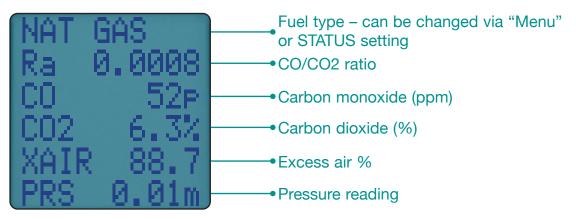
USING YOUR ANALYSER

COMBUSTION TESTS

Insert your flue probe tip into the centre of the flue. Readings will settle within 60 seconds assuming boiler conditions are stable.

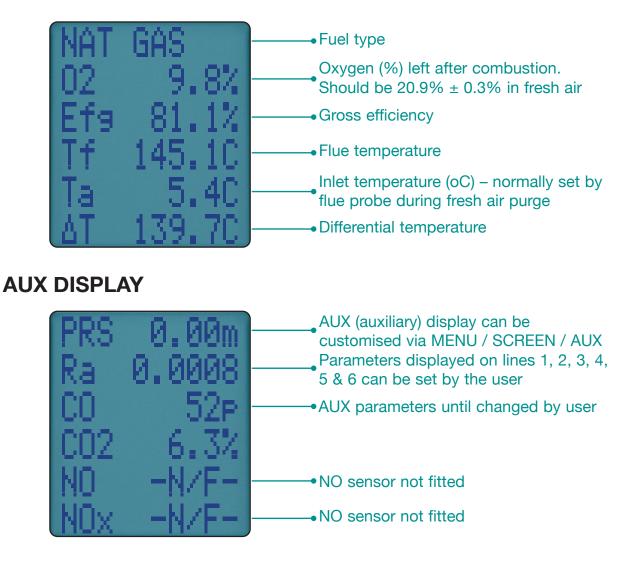
Rotate dial to "Ratio" to display:

RATIO DISPLAY



Press <a>> button to send a full combustion test to our optional KANE IRP-2 printer or KANE's App via Wireless module.

O2/EFF DISPLAY



TRANSFERING RESULTS

To print, simply press and release the ⇒ button to send results to our optional KANE IRP-2 printer or KANE's App via wireless module – you can stop printing by pressing ← again.

Your analyser's side lights highlight the displays the active line.

Use \blacktriangle or \triangledown to change the pointer.

Press 🕶 to select a line. The side lights now flash.

Use \blacktriangle or \triangledown to scroll or change the selected line.

Press 🕶 to exit a line.

TO VIEW / PRINT A LOGGED REPORT

Select MENU / REPORT / COMBUSTION / VIEW.

Your analyser's side lights highlight the top line of its display.

Press 🕶 to select this line – side lights will flash.

Use \blacktriangle or \checkmark to scroll or change the Log No – if only 1 report is logged, number will not change.

Press - to confirm a Log No. – the side lights will stop flashing.

To view logged data press \blacktriangle or \checkmark to highlight another line.

Press - sidelights will flash on that line.

Use \blacktriangle or \blacktriangledown to scroll through data.

To finish, press - Sidelights stop flashing.

Use \blacktriangle or \blacktriangledown to scroll down to "PRINT".

Press 🕶 to print.

VIEWING / PRINTING A LOGGED COMBUSTION TEST

Press 🕶 to send tests to our optional KANE IRP-2 printer or KANE's App via wireless module.

KANE INFRARED PRINTER

Switch on your printer and place its infrared receiver in line with the emitter on top of your analyser – allow a 15cm gap between the printer and analyser.

PRINTOUTS Auxiliary Combustion Pressure/Temp Sweep Test KANE4585 SW00095 V1.01 KANE458S SW00095 V1.01 KANE4585 SW00095 V1.01 KANE4585 SW00095 V1.01 YOUR COMPANY NAME & PHONE NUMBER HERE SERIAL No. 182620203 SERIAL No. 182620203 SERIAL No. 182620203 SERIAL No. 182620203 DATE 30/06/20 TIME 09:11:53 LOG No. DATE 30/06/20 TIME 09:11:14 DATE 30/06/20 TIME 09:15:23 DATE 30/06/20 TIME 08:59:16 NEXT CAL 30/06/21 NEXT CAL 30/06/21 NEXT CAL 30/06/21 NEXT CAL 30/06/21 COMBUSTION FUEL TYPE NAT GAS AUX SWEEP TEST ROOM CO PRS/TEMP PRS mbar 0.00 T1 °C 21.4 T2 °C 20.9 DELTA °C 0.5 C02 % 0.00 02 % 20.95 C0 ppm 1 N0 ppm -N\F-N0x ppm -N\F-FUEL TYPE NAT GAS CO2 % 0.00 CO ppm 1 CO/CO2 0.0000 0 O2 % 20.95 LOSS % 02++ XAIR % 02++ LIMIT 10ppm ALARM 30ppm TESTS 1 TEST CO ppm 01 1 FLUE °C -N\F-AMBIENT °C 25.5 NETT °C -N\F-C0/C02 0.0000 CUSTOMER MAXIMUW CO ppm 1 NET % 02++ LOSS % 02++ XAIR % 02++ CUSTOMER PRS mbar -0.00 CUSTOMER APPLIANCE CUSTOMER APPLIANCE APPLIANCE APPLIANCE REFERENCE _. LALHCE REFERENCE REFERENCE REFERENCE

Commission

KANE4585 SW00	095 V1	.01
YOUR COMPANY PHONE NUMBER	NAME 8 HERE	
SERIAL No.	18262	0203
LOG No.		01
DATE TIME	30/06 09:12	
NEXT CAL	30/06	
COMWISSION TE	ST	
ANALYSER ZERO		
	% ppm	0.00
co	ppm	0
FLUE INTEGRIT	Y	
C02	%	0.13
MAX GAS FLOW		
	%	0.15
C0 C0/C02	ppm 0	
MIN GAS FLOW		
	ppm	0.21
C0/C02	0	.0005
FLOW & RETURN		
T1	°C	21.6
T2 DELTA		20.9
CUSTOMER		
APPLIANCE		
APPLIANCE		

Let by/Tightness

SERIAL I LOG No. DATE TIME NEXT CA LET BY PRS 1 PRS 1 PRS 2 LET BY

PRS 1 PRS 2 DELTA STABILI TIGHTNE CUSTOME

APPLIAN

REFEREN

Type A

s swoi				1	
MPANY UMBER	HERE	&			
No.	182	620	2	03	
				C	1
	30/ 09:				
L	30/	06/	2	1	
TEST					
	mbar mbar MINS		001		10
SS TE					
	mbar mbar mbar		000	.0.0	10
S'N SS	MINS		1 2		0
R					
 CE					
CE					

KANE4585 SWO	0095 V1.01
YOUR COMPANY PHONE NUMBER	NAME & HERE
SERIAL No.	182620203
LOG No.	01
DATE	30/06/20
TIME	08:21:15
NEXT CAL	30/06/21
ROOM CO	
TYPE A SPACE	
HEATER	
LINIT	10ppm
ALARM	
TESTS	30
TEST	CO ppm
	0
04	0
06	
08	
09	0
	0
14	1
16	0
17	
19	1
20 21 22	0
	0
24 25	0
26	0
27 28	0
29	1
MAXIMUM CO p	
novinon co b	an i
CUSTOMER	
APPLIANCE	
APPLIANCE	
REFERENCE	

COMMISSIONING TEST

Your analyser's commissioning test uses the test outlined in the UK's TB143 but is not a substitute for an appliance manufacturer's instructions.

Rotate dial to COM TEST position and follow your analyser's instructions.

TEST 1 – CHECK THE APPLIANCE AT MAX GAS RATE

Switch on appliance to max rate and zero your analyser in outside fresh air.

Once stable at its maximum gas flow rate; insert your flue probe into the flue's air inlet to measure CO_2 levels – Readings must be stable & under or equal to 0.20%.

TEST 2

Insert your flue probe into the appliance's exhaust outlet to measure CO, CO_2 & RATIO levels – these must be within the manufacturer's instructions. If manufacturer's instructions are not available CO must be under 350ppm & RATIO under 0.0040.

TEST 3 – CHECK THE APPLIANCE AT MINIMUM GAS FLOW RATE WHERE THIS IS POSSIBLE

Once the appliance is stable at its minimum gas rate, measure CO, CO₂ & RATIO levels – these must be within the manufacturer's instructions.

If manufacturer's instructions are not available, CO must be under 350ppm & RATIO under 0.0040.

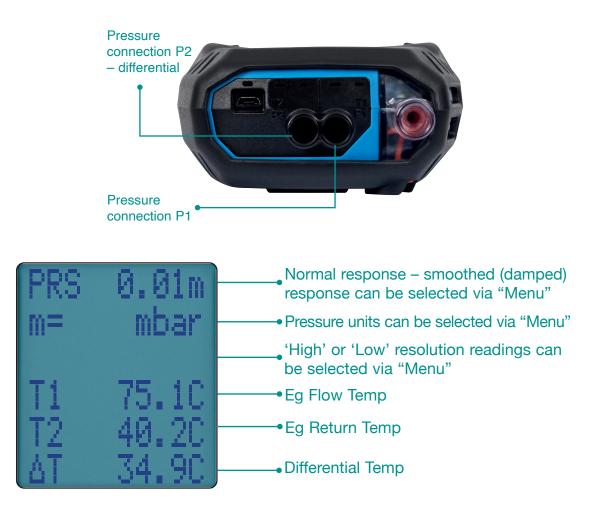
TEST 4 – MEASURE FLOW & RETURN TEMPERATURES FROM THE APPLIANCE

All measured readings are logged & can be printed to our optional KANE IRP-2 printer or KANE's App via wireless module.

PRESSURE & TEMPERATURE TESTING

Never attempt to take a pressure reading without knowing maximum pressure that might be present. The Analyser's pressure transducer is rated at 80 mbar with a maximum over range of 400 mbar.

Rotate dial to Prs/Temp. Using the black connectors and the manometer hose, connect to P1 for single pressure or P1 and P2 for differential pressure.



VIEWING/PRINTING

Press <a>> button to send your Pressure and Temperature report to our optional KANE IRP-2 printer or KANE's App via Wireless module.

Press & hold reports button for 2 seconds to log a pressure and temperature report. Page 20 explains how to view & print stored reports.

PRESSURE MEASUREMENT GOOD PRACTICE

Before using your analyser to measure an appliance's gas/air ratio valve, read the manufacturer's instructions thoroughly. If in doubt contact the manufacturer.

After adjusting a gas/air ratio valve you must ensure CO, $CO_2 \& CO/CO_2$ ratio readings are within the manufacturer's specified limits.

LARGE BORE TUBING ISSUES

If using lager bore tubing when performing pressure tests:



Push orange tube over the rim of the spigot to ensure a gas tight seal.





This may not produce a gas tight seal.

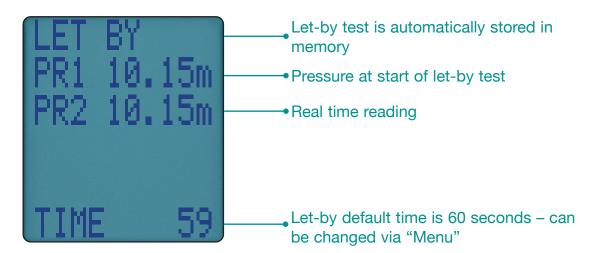
LET-BY & TIGHTNESS TESTING

Rotate dial to "Tightness" and press 🖛 to auto zero pressure sensor.

Using the black connectors, connect your manometer hose from the appliance's test point to your analyser's P1 input.

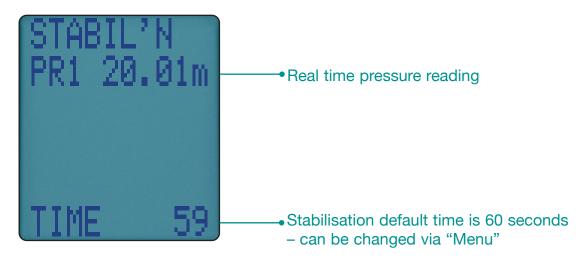
Display shows "LET BY?" – use ▲ ▼ & ← to select YES or NO.

If YES is selected, set the let-by pressure then press — to start the let-by test – display shows:

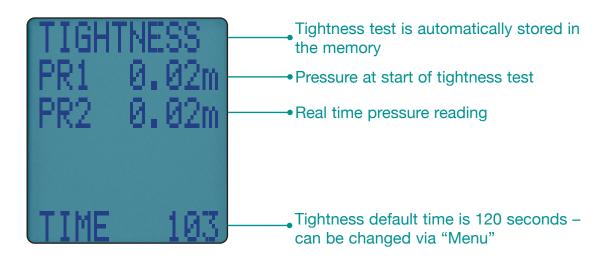


If let-by test fails rotate dial to another position to stop the test.

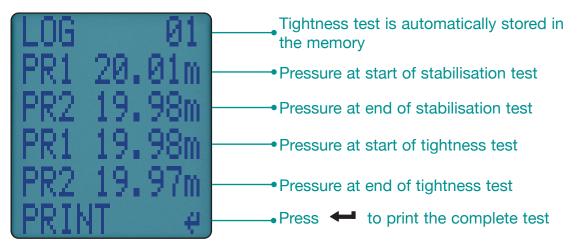
If Let-by test passes, adjust gas pressure for the tightness test & press to start the stabilisation test – display shows:



When complete press 🕶 to start the tightness test:



When complete display shows:



VIEWING/PRINTING

Press
 button to print a full Let-By & Tightness report to our
 optional KANE IRP-2 printer or KANE's App via wireless module.

Let-by & Tightness reports are automatically stored. Page 20 explains how to view & print stored reports.

ROOM CO TESTING

Select "Room CO" to measure and record CO readings for up to 30 minutes.

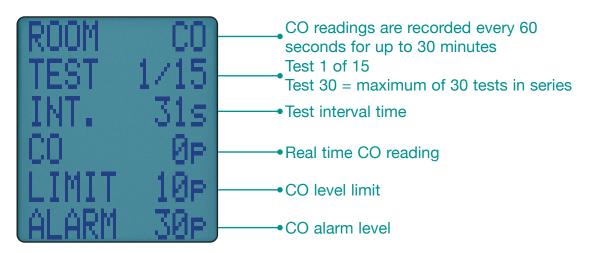
Use $\blacktriangle \mathbf{\nabla}$ to select test type from the following:



TEST TYPES

TEST TYPE	DURATION	LIMITS/ALARM LEVELS
GENERAL	15 minute test with results stored every minute	LIMIT = 10ppm ALARM = 30 ppm
SWEEP TEST	2 minute test with max read- ing stored at end	LIMIT = 10ppm ALARM = 30 ppm
MIGRATION TEST	15 minute test with results stored every minute	LIMIT = 10ppm ALARM = 30 ppm
TYPE C SEALED APPLIANCE	15 minute test with results stored every minute	LIMIT = 10ppm ALARM = 30 ppm
TYPE B BOILER OPEN FLUE	15 minute test with results stored every minute	LIMIT = 10ppm ALARM = 30 ppm
TYPE A COOKER	30 minute test with results stored every minute	LIMIT = 10ppm ALARM = 30 ppm
TYPE A WATER HEATER	5 minute test with results stored every minute	LIMIT = 10ppm ALARM = 30 ppm
TYPE A SPACE HEATER	30 minute test with results stored every minute	LIMIT = 10ppm ALARM = 30 ppm

ROOM CO DISPLAY



You can stop the Room CO test at any time by pressing \leftarrow .

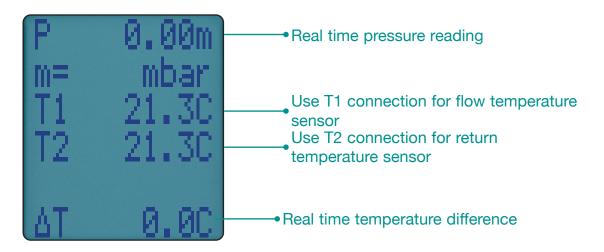
Otherwise Room CO tests automatically end after the pre-set time.

Room CO tests are automatically stored in your analyser's memory as a log number.

You can send your Room CO test log to our optional KANE IRP-2 printer or KANE's App via wireless module by pressing $\widehat{\mbox{\circle*{1.5}}}$.

USING YOUR KANE458s AS A THERMOMETER OR PRESSURE METER

Rotate the dial to PRS/TEMP – display will show:



ANALYSER PROBLEM SOLVING

FAULT SYMPTOM	CAUSES / SOLUTIONS
Oxygen too high CO2 too low	 Air leaking into probe, tubing, water trap, connectors or internal to analyser
 Batteries not holding charge Analyser not running on mains adapter 	 Batteries exhausted AC charger not giving correct output No fuse
•Analyser does not respond to flue gas	 Particle filter blocked Probe or tubing blocked Pump not working or damaged with contaminants
Net temperature or Efficiency calculation incorrect	 Ambient temperature set wrong during Automatic Calibration
•Flue temperature readings erratic	 Probe not connected Faulty connection or break in cable or plug
• T flue or ΔT displays (-N/F-)	Probe not connected.Faulty connection or break in cable or plug
• EFF or X-Air displays (- O2++-)	• CO2 reading is below 2%. • 02 > 18%
Analyser just continually beeps	 Turn dial back to MENU and press Turn dial back to Tightness and press

SPECIFICATIONS

PARAMETER	RANGE	RESOLUTION	ACCURACY		
Temperature Measurement					
Flue Temperature	0 - 600°C	0.1°C	±0.5°C		
Inlet temperature (Internal Sensor)	0 50°C	0.1°C	±1°C		
Inlet temperature (External Sensor)	0 - 600°C	0.1°C	±0.5°C		
Flue Gas Measurement					
Carbon Monoxide	0 - 2000ppm	1ppm	±3ppm or ±5% of reading (whichever is greater)		
Carbon Dioxide	0 - 20%	0.1%	±0.3% Volume		
Oxygen (If fitted)	0 - 21%	0.1%	±0.3% Volume		
Nitric Oxide (If fitted)	0 - 600ppm	1ppm	±5ppm or ±5% of reading (whichever is greater)		
Calculations					
Oxygen	0 - 21%	0.1%	±0.3% Volume		
CO/CO2 Ratio	0 - 0.9999	0.0001	±5% of reading		
Efficiency (Net or Gross)	0 - 99.9%	0.1%	$\pm 1\%$ of reading		
Efficiency High (C)	0 - 119.9%	0.1%	±1% of reading		
Excess Air	0 - 119.9%	0.1%	±0.2% of reading		
Pressure (Differential)	±80mbar	0.1mbar	±0.5% FSD		
Pre-programmed Fuels					
UK, USA & France	Natural Gas, Propane, Butane, LPG, Light Oil, Digester Gas, Wood Pellets Heavy Oil				
European	Natural Gas, Light Oil, Bio Oil, Coke, LPG, Wood, Town Gas, Butane & Propane				
Battery Life	>8 hours (continuous with pump on)				
Certification	The KANE458s is independently tested and certified to EN 50379, Parts 1-3 in accordance to 1st German Federal Emission Control Ordinance (Bim5chV)				

PARAMETER	RANGE	RESOLUTION	ACCURACY	
Operating Conditions				
Temperatures	0 - 45°C			
Humidity	15 to 90% RH, (non-condensing)			
Power Supply	Rechargeable batteries, USB Charging			
Physical Characteristics				
Weight	Approx. 0.625g			
Dimensions	L: 216mm x H: 105mm x W:45mm			

EU DECLARATION OF CONFORMITY

This declaration of conformity is issued under the sole responsibility of the manufacturer:-

Kane International Ltd.

Kane House, 11 Bessemer Road, Welwyn Garden City, Hertfordshire. AL7 1GF, UK.

Tel: +44 1707 375550 Web: www.kane.co.uk

The KANE458s is in conformity with the relevant Union harmonization legislation below:

DIRECTIVE	TITLE
201430EU	Electromagnetic Compatibility (EMC)
201165EU	Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

The following harmonised standards and technical specifications have been applied:

CERTIFICATION

The KANE458s is independently tested and certified to EN 50379, Parts 1 & 3 in accordance to 1st German Federal Emission Control Ordinance (BImSchV)

EMC

EN50270:2015

SAFETY

EN61010-1:2010

ROHS

IEC62321-2:2013, IEC62321-1:2013, IEC62321-3-1:2013, IEC62321-5:2013, IEC62321-4:2013, IEC62321-7-2:2017, IEC62321-7-1:2015, IEC62321-6:2015

Signed for on behalf of:- Kane International Ltd.

01. July 2020



Paul Morrison Engineering Manager

SERVICE - CALIBRATE - RECERTIFY



All analysers & pressure meters should be recertified annually.

Extend your KANE analyser and pressure meter's 'no quibble' warranty up to 10 years by returning your analyser & pressure meter via your KAM dashboard annually.

KANE ASSET MANAGER (KAM)

The fastest way to manage your analyser's recertification with FREE postage using www.kane.co.uk





Register your KANE analyser to create your KAM dashboard:

- ★ Simple online booking on www.kane.co.uk
- ★ Relevant product specific promotions, special offers & discounts
- ★ Automatic reminder when due for recertification
- ★ FREE POSTAGE returning your KANE analyser
- ★ SAME DAY annual FGA recertification OR YOUR MONEY BACK*





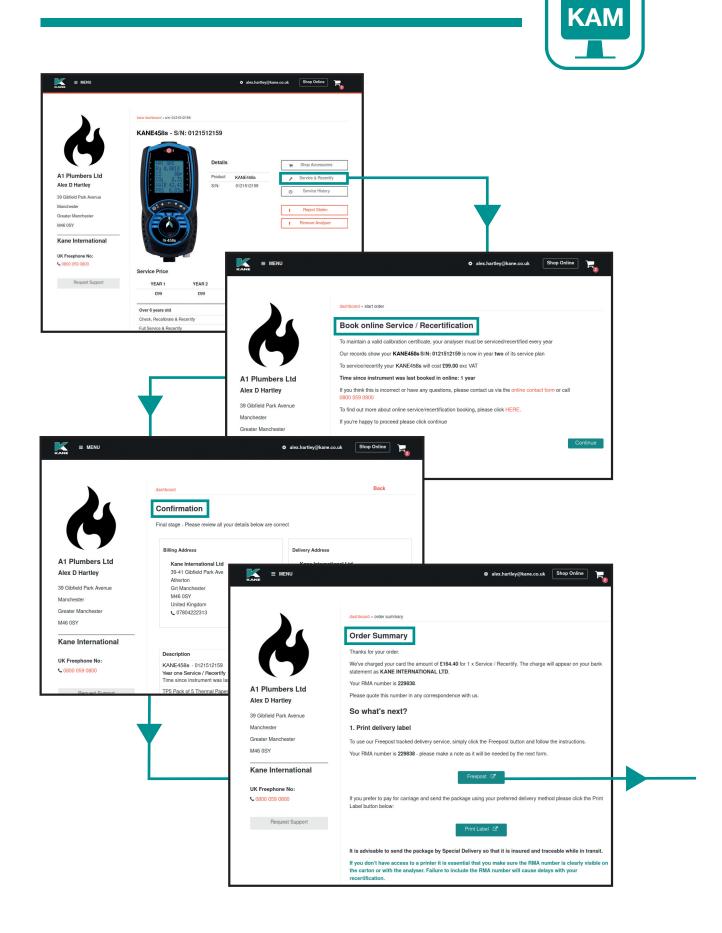
Use your KAM dashboard to:

- View your Payment History / Company Details / Analyser Details / Service Pricing
- Buy KANE products, accessories, spares & consumables with FREE delivery
- Manage your KANE analyser's recertification online to receive same day turnaround
- Service History: Access, view & email electronic Calibration Certificates when required for compliance
- Report Stolen: Reporting your analyser stolen ensures our Stolen Analyser Register is up-dated & helps prevent industry colleagues unknowingly buying stolen goods
- Remove your KANE Analyser once sold so its new owner can also benefit

There are different KAM options & we'd be delighted to discuss your individual requirements More than 4 FGAs? Contact: support@kane.co.uk

*Excludes KANE '9 series' analysers & UKAS certificates

Your support - our way



GUARANTEED SAME DAY DESPATCH

Analyser Service & Recertification

