KANE458s

Flue Gas Analyser with direct CO2 measurement and CO sensor protection

Stock No: MAN00232 Rev 1.00721

JULY 2021

CONTENTS

KANE458S OVERVIEW

Your combustion analyser measures:

- Carbon Monoxide (CO)
- Carbon Dioxide (CO2)
- Pressure
- Temperature

Depending on your options these parameters are measured or calculated:

- Oxygen (O2)
- Nitric Oxide (NO)
- Nitrogen oxides (NOx)
- CO/CO2 ratio
- Combustion Efficiency
- Losses
- Excess Air
- Differential Pressure
- Differential Temperature

Your KANE458s has a protective rubber cover with magnets for “hands-free” operation and is supplied with a flue probe with integral temperature sensor and battery charger with 3 NiMH batteries.

Your KANE458s has a low gas flow detector switching off the analyser pump if it detects water entering the analyser from an overfilled water trap.

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

The display’s bottom line also highlights analyser status at all times.

Your KANE458s can print test reports to an optional infra-red printer or wirelessly transfer them to KANE’s Apps.

Your KANE458s stores up to 45 logs of any combination of Combustion, AUX, Temperature & Pressure test results. 25 Tightness Tests,25 Commissioning tests & 25 Room CO tests

You can add 2 lines of 16 characters to your test results header.

KANE LINK wirelessly connects optional KANE LINK devices to your analyser.

ANALYSER FEATURES AND KEYPAD

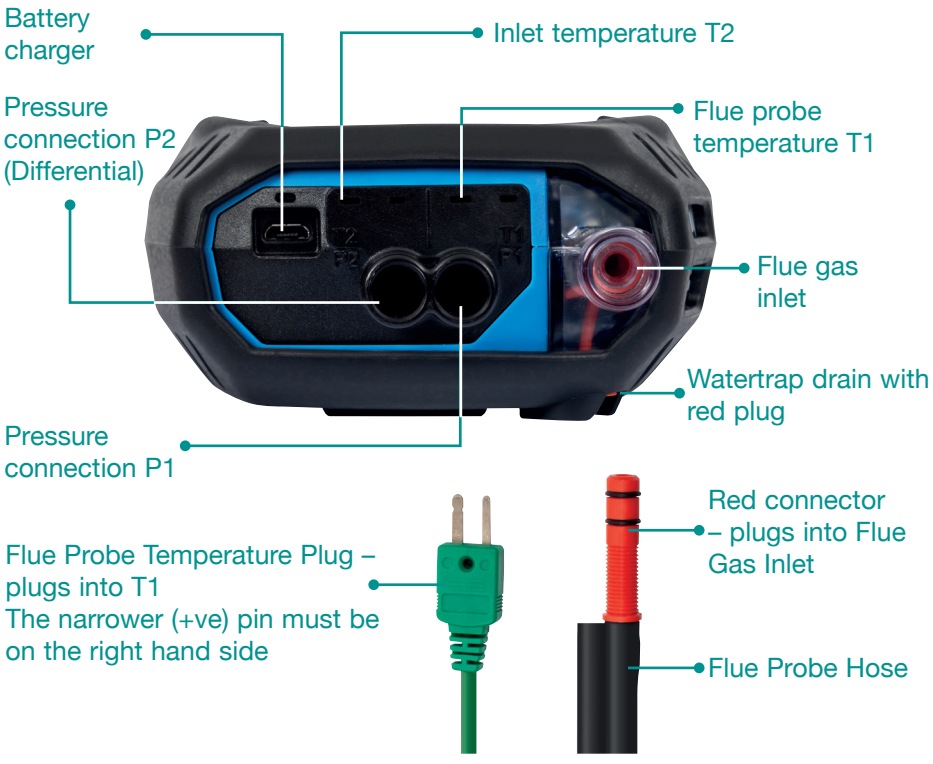
KEYPAD BUTTONS

ICON	DESCRIPTION
	Save log – Long press to store data
	Print report. Short press to print a report, Choose PRINTER or WIRELESS to KANE's Apps
	Navigate up – Short press to scroll up
	Enter button – Use to select the current option
	Navigate down – Short press to scroll down
	Data hold – Short press to hold current data on screen
	Pump toggle – long press to toggle the pump on or off

Function buttons

Rotary dial

INSTRUMENT LAYOUT




Thermocouple
Stainless Steel Shaft
Depth Stop Cone
Gas Path
KCP2
KANE
Magnets x2
Watertrap drain with red plug
Thermocouple Wire

BATTERIES

BATTERY TYPE

This analyser uses rechargeable Nickel Metal Hydride (NiMH) batteries - Using other battery types may void your analyser warranty.

⚠ WARNING

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

Do not mix NiMH cells of different capacities or from different manufacturers - All batteries must be identical.

REPLACING BATTERIES

Turn over your analyser & remove its protective rubber cover to find trhe battery compartment & fit 3 NiMH “AA” rechargeable batteries ensuring they are fitted with correct battery polarity. Replace battery cover & protective rubber cover.

TIME AND DATE

After changing batteries reset your analyser time & date.

CHARGING NIMH BATTERIES

Your analyser uses a standard Micro USB connector - For best results turn it off then connect your charger. The charging indicator will illuminate and turn off when the need for charge is over.

Your first charge should be for 8 hours - Thereafter NiMH batteries can be “topped up” at any time, even for short periods.

If your batteries discharge and your analyser enters a low power shutdown, 1 hour’s charge provides approx 2 hours continuous use.

BATTERY DISPOSAL

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

GENERAL SAFETY

⚠ SAFETY WARNING

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 detectors users should conduct “bump” tests before relying on units to verify atmospheres are free from hazard.

A “bump” test is a way to check an instrument works within acceptable limits by briefly exposing it to known gas mixtures to change the output of all sensors present.

Note: This is different from a calibration where the instrument is also exposed to known gas mixtures but allowed to settle to a steady figure with readings 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

FIRST TIME USE

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

Take time to read this manual fully and be aware your analyserÏ configuration may not support all features explained in this manual. Before using your analyser set it up for your requirements.

NOTE: Your analyser STATUS bar displays current time, date and battery status - Check time & date are correct as they can only be changed if you have not stored any logs in Memory to protect the integrity of your stored data.

GENERAL OPERATING PRINCIPLE

Using your analyser is simple with the rotary dial and user interface. Most tests can be made with little user activity.

Your analyser status bar offers options based on tasks you are performing, displaying useful information and messages.

QUICK START

Turn on your analyser pressing the ⏻ button for 2 seconds until it starts. Your analyser starts a calibration - once completed select your tests by turning the analyser rotary dial.

USER INTERFACE

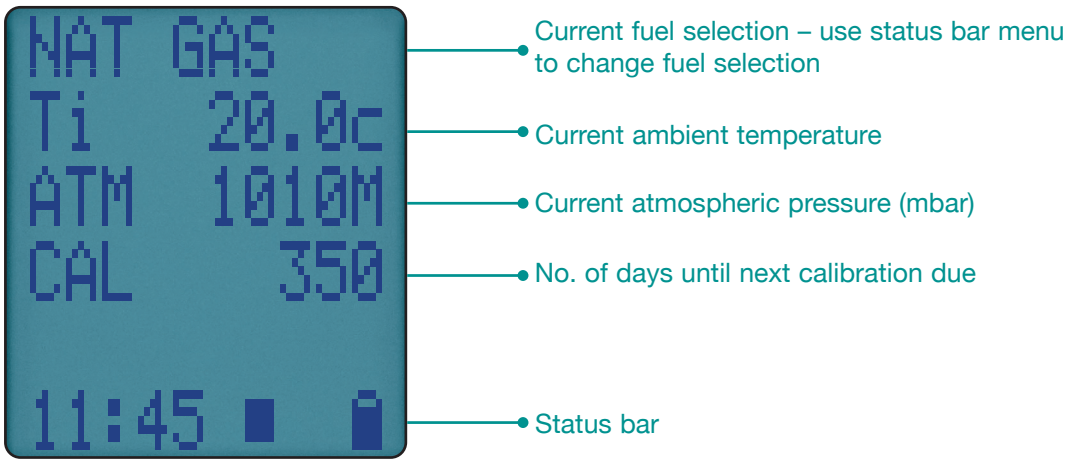
Your analyser display shows 5 lines of tests & a status bar. The backlight activates on each button press then turns off after 10 seconds.

Navigate through your options and menu choices via ▲ ▼ & ↵.

Button presses are either short or long presses.

STATUS

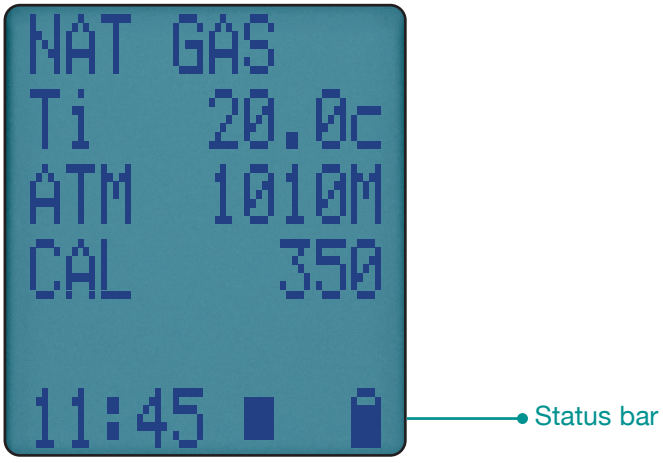
Rotate dial to STATUS to view:



STATUS BAR

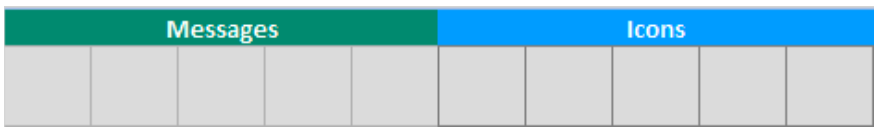
The Status bar shows your analyser status and offers options based on your settings.

Navigate through the status bar options using ▲ & ▼ buttons when the status bar is on the display.



STATUS BAR LAYOUT

The status bar splits into 2 zones: “Message” & “Icon”:

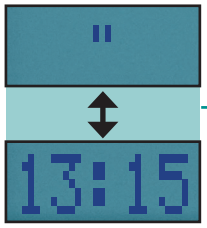


STATUS BAR MESSAGE AREA

CLOCK FUNCTION

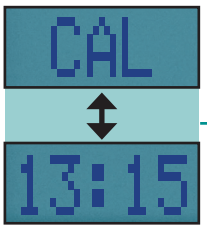
Displays current time

DATA HOLD FUNCTION



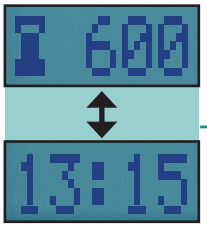
Display alternates between Hold symbol & time stamp of held data

CALIBRATION DUE WARNING MESSAGE



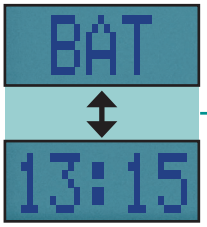
Display alternates between calibration due symbol & current time

AIR PURGE "SNOOZE" TIMER



Display alternates between air purge snooze duration & current time

LOW BATTERY WARNING MESSAGE

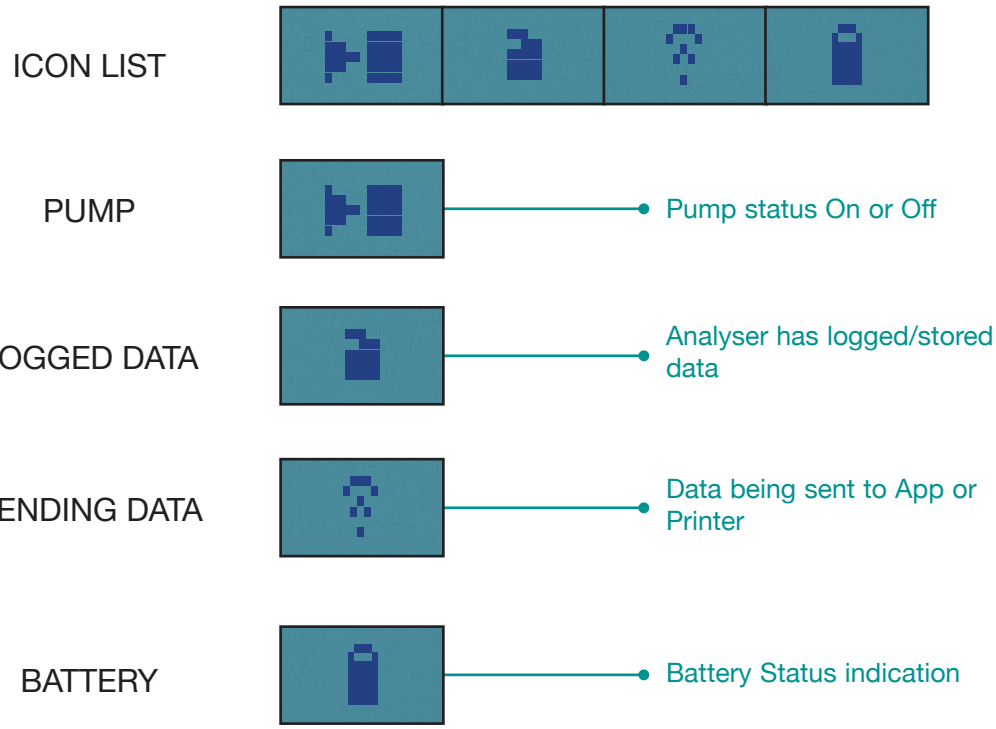


Display alternates between low battery symbol & current time

STATUS BAR ICONS

Icons give quick & simple status information:

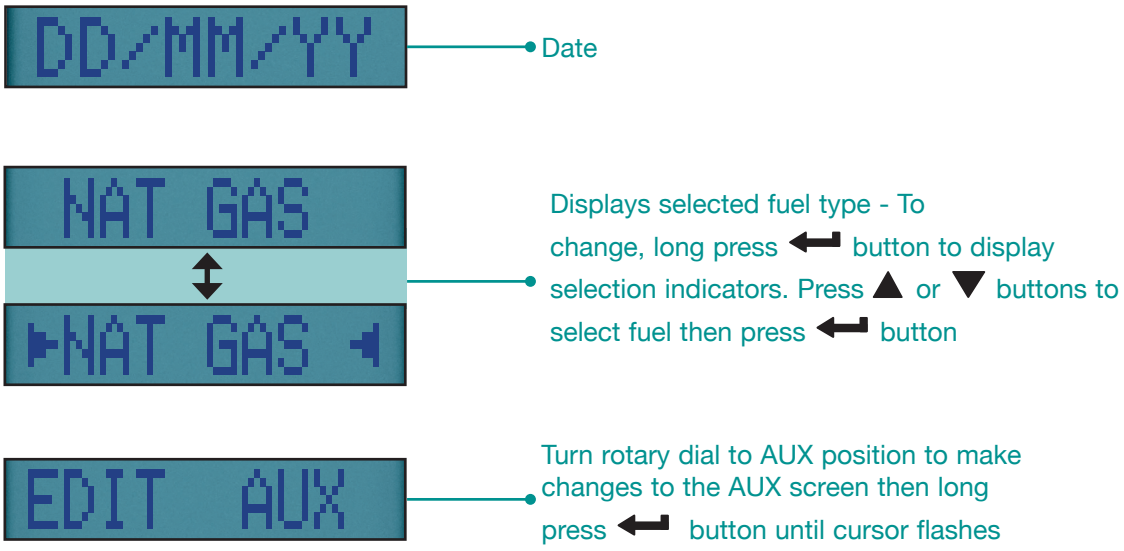
STATUS BAR ICON LEVEL



STATUS BAR MENU OPTIONS

Status Bar offers helpful menu items based on what's displayed on your analyser screen.

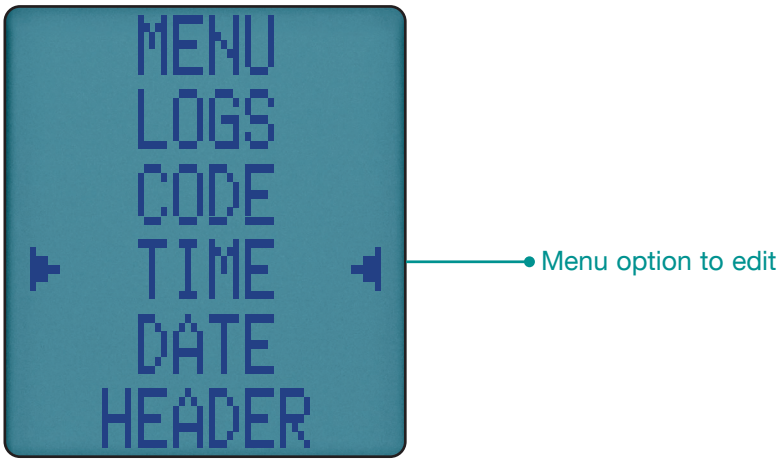
STANDARD OPTIONS



USING THE MENU

Rotate dial to MENU to customise your analyser settings to your requirements.

Navigate through MENU using ▲ ▼ & ↵.



As you navigate up or down the menu items will move up or down the screen returning to the beginning.

NOTE: To exit MENU rotate dial to any position but any changes not entered will not be stored.

MENU ITEMS

MENU ITEM	MENU TEXT	OPTIONS/COMMENTS
TIME	TIME	HH:MM:SS format E.g.. 7am = 07:00:00, 7pm = 19:00:00
DATE	DATE	DD/MM/YY format
HEADER	HEADER	Edit 2 Line Header on your printouts
REPORTS	REPORTS	View current memory usage & view stored reports
EFFICIENCY	EFF	Efficiency calculation analyser is set to Gross or Net — Condensing selected based on selected fuel type
GAS SCALE	ppm/mg	Select, ppm, ppm(n), mg/m3, mg/m3(n), mg/kWh, mg/kWh(n)

PRINTER TYPE	IR PRINT	Select, KMIRP, IRP-2
02 REF	02 REF	Use for “Normalised” readings - Default set to 3%, can adjust up or down
LANGUAGE	LANG	Selects your required language
CODE	CODE	Password protected for authorised service agents only - Default to 000000

KANE LINK

You can wirelessly connect optional KANE LINK devices to your analyser. Once connected, they stay connected until you use KANE LINK to remove them.

If on, they replace or add to you analyser measurements your analyser makes.

See page 29 to add or remove optional KANE LINK devices

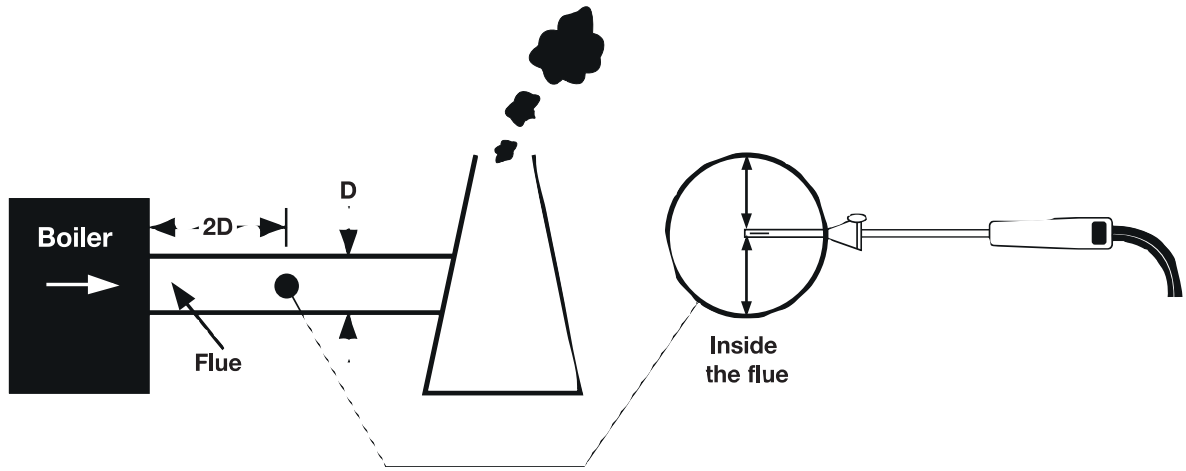
MEASURING FLUE GASSES

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

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

⚠ WARNING

Ensure the flue probe handle does not get hot!



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

- Do not exceed flue probe max temperature - typically (600°C
- Do not exceed analyser internal temperature operating range
- Do not put analyser on hot surfaces
- Do not exceed analyser water trap max level
- Do not let analyser particle filter become dirty and blocked

View displayed data to ensure stable operating conditions are achieved and readings are within expected range.

SENDING OR STORING TEST REPORTS

Press and release button, then select your optional KANE IRP printer or your App using ▲ or ▼ then ↵.

USING YOUR KANE INFRARED PRINTER

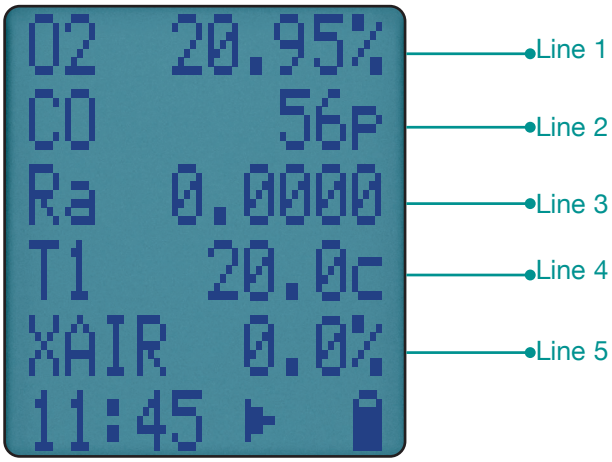
Switch on your printer and make ready to accept data with its infrared receiver in line with your analyser emitter on top of the analyser – allow a 15cm gap between analyser and printer.

CO SENSOR PROTECTION PUMP

Your analyser CO sensor is automatically protected from high levels of CO - When it measures CO above 2000ppm the main pump stops and the CO purge pump starts.

Your analyser displays P-OFF until CO levels fall below 2000ppm.

AUX SCREEN



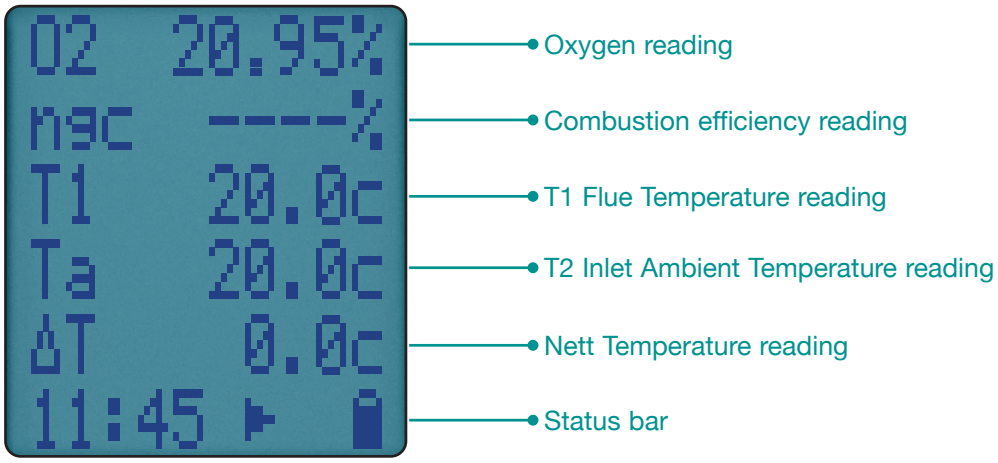
EDITING AUX SCREEN

You can customise lines 1 to 5 of the AUX screen. To edit a line, rotate dial to AUX then press ▲ or ▼ until EDIT appears on the status bar. Press and hold ↵ to select EDIT.

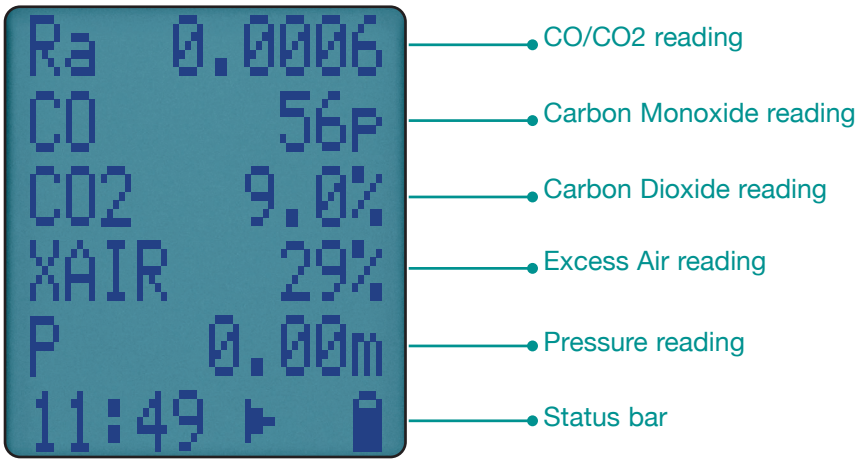
The cursor flashes and the line number appears in the status bar. Use ▲ or ▼ to select your option to appear on the line then press ↵ to enter.

If you have a wirelessly connected DTHA2 anemometer, it will automatically display its readings on AUX when on. To stop this, simply switch off the DTHA2.

ROTATE DIAL TO 02/EFF



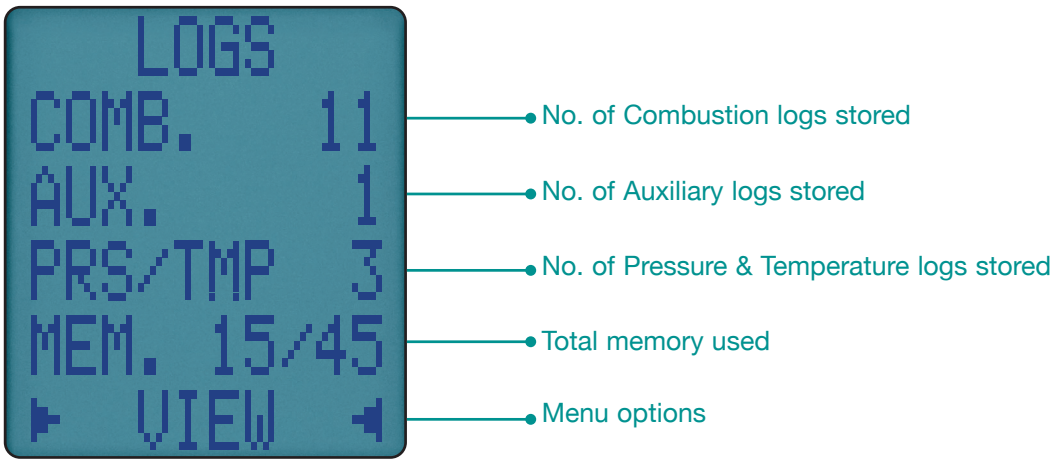
ROTATE DIAL TO RATIO



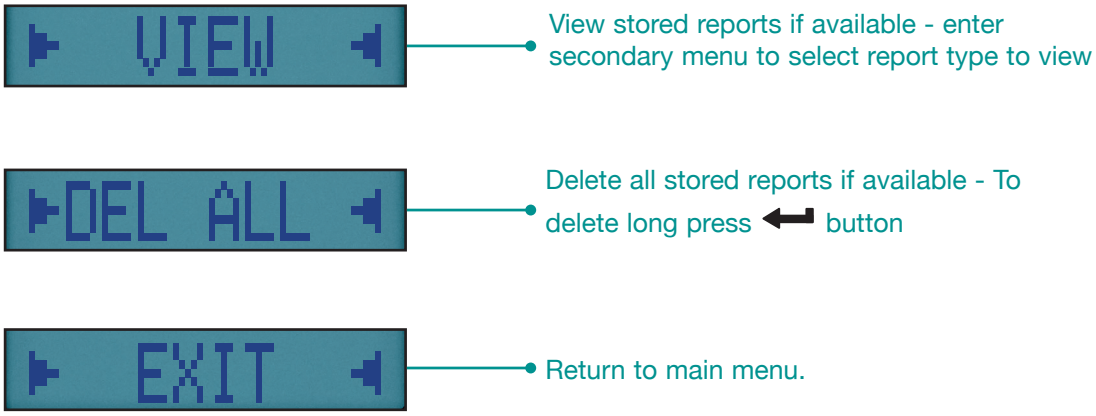
STORED MEMORY LOGS (REPORTS)

Your analyser has a shared memory system which means your stored logs are not limited by type.

An icon displays when your analyser has stored data. To view current memory, rotate dial to MENU then select LOGS to display this:



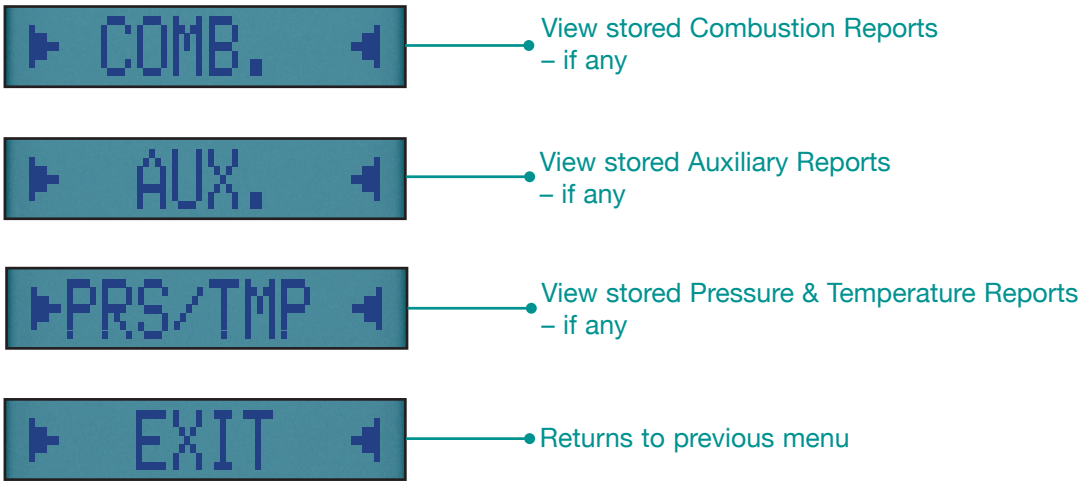
MENU OPTIONS



VIEWING STORED LOGS

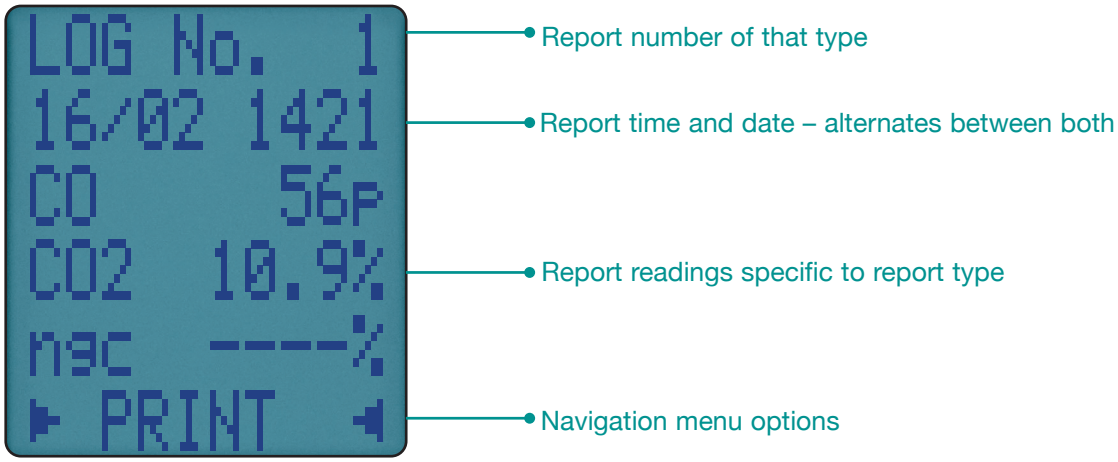
To view your reports, select VIEW option from LOGS Menu:

REPORT VIEW MENU OPTIONS

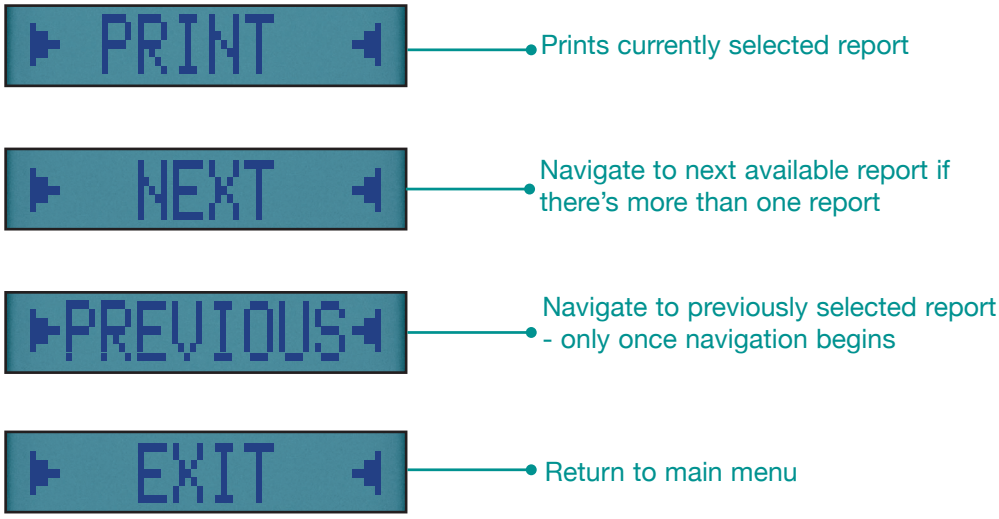


TO VIEW OR TRANSFER STORED REPORTS

Once you select your report the first report is diplayed



REPORT NAVIGATION MENU OPTIONS



Note: Access commissioning, Tightness & Room CO investigation reports accessed via relevant dial position, then select view from status bar.

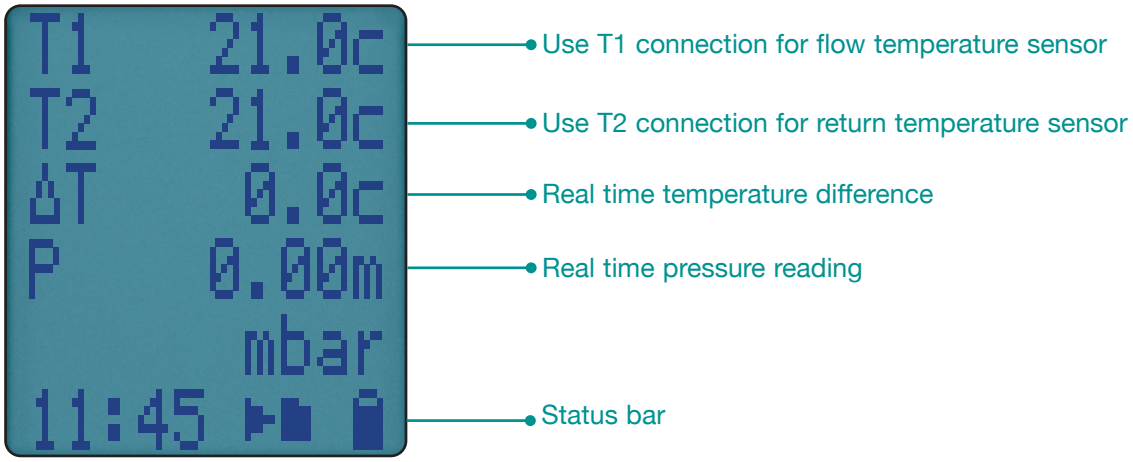
PRESSURE & TEMPERATURE TESTING

⚠ WARNING

Never attempt to take a pressure reading without knowing the maximum pressure present. This analyser pressure transducer is rated at 80 mbar with a maximum over range of 400 mbar.

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

TEMPERATURE & PRESSURE DISPLAY



SENDING OR STORING REPORTS

Press and release ᯤ then select either your optional KANE IRP printer or wirelessly to your APPS.

Press and hold ᯤ button for 2 seconds to log.

PRESSURE MEASUREMENT GOOD PRACTICE

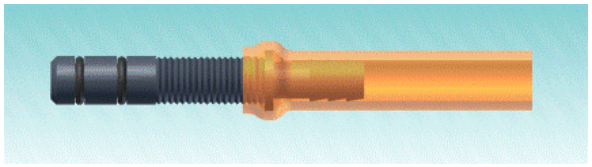
⚠ WARNING

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

After adjusting a gas/air ratio valve it is essential CO, CO_2 & CO/CO_2 ratio readings are within appliance manufacturer specified limits.

LARGE BORE TUBING ISSUES

If using large bore tubing when performing pressure tests:



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

This may not produce a gas tight seal.

TESTS

COMMISSIONING TEST

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

Rotate dial to COM TEST position. Press ▼ followed by ↵ & follow your analyser instructions.

TEST 1 – CHECK THE APPLIANCE AT MAX GAS RATE

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

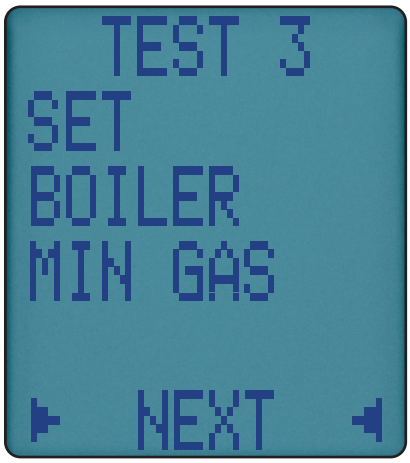
Once stable at the appliance maximum gas flow rate, insert your flue probe into the flue's air inlet to measure CO2 levels - Readings must be stable & greater or equal to 0.20%.

TEST 2

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

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

Select NEXT on status bar using ▼ and ↵.



The appliance is stable at minimum gas rate, measure CO, CO_2 & RATIO levels – these must be within the manufacturer instructions.

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

To finish press ↵. To continue next press ▼ followed by ↵.

TEST 4 – MEASURE APPLIANCE FLOW & RETURN TEMPERATURES

All measured readings are logged & can be printed to our optional KANE IRP-2 printer or wirelessly to our KANE Apps. See page 18-20.

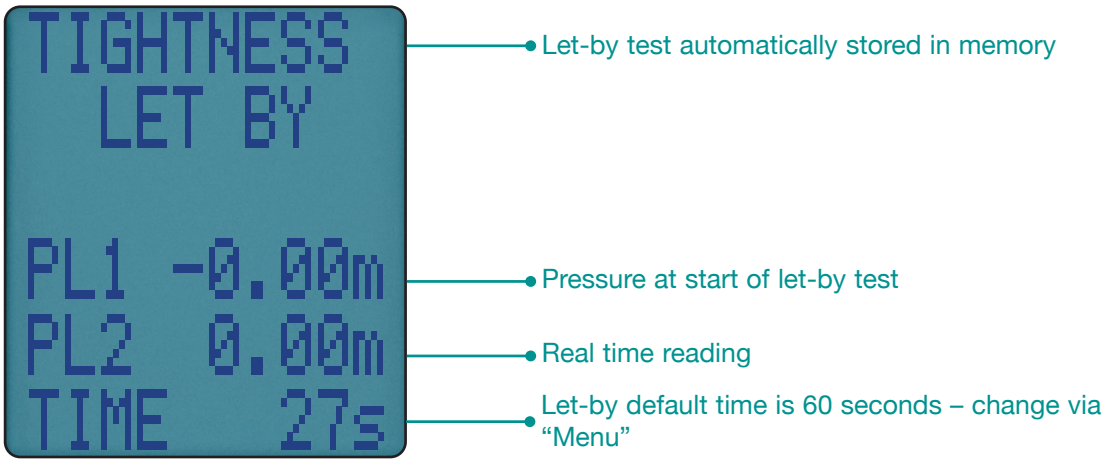
LET-BY & TIGHTNESS TESTING

Rotate dial to TIGHTNESS & press ↵ to auto zero pressure sensor.

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

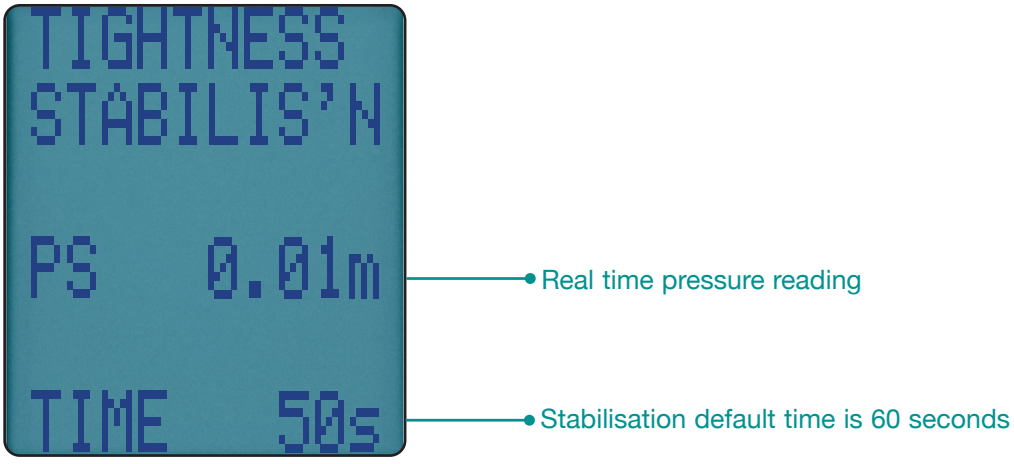
Display shows “LET BY?” – use ▲ ▼ & ↵ to select YES or NO.

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

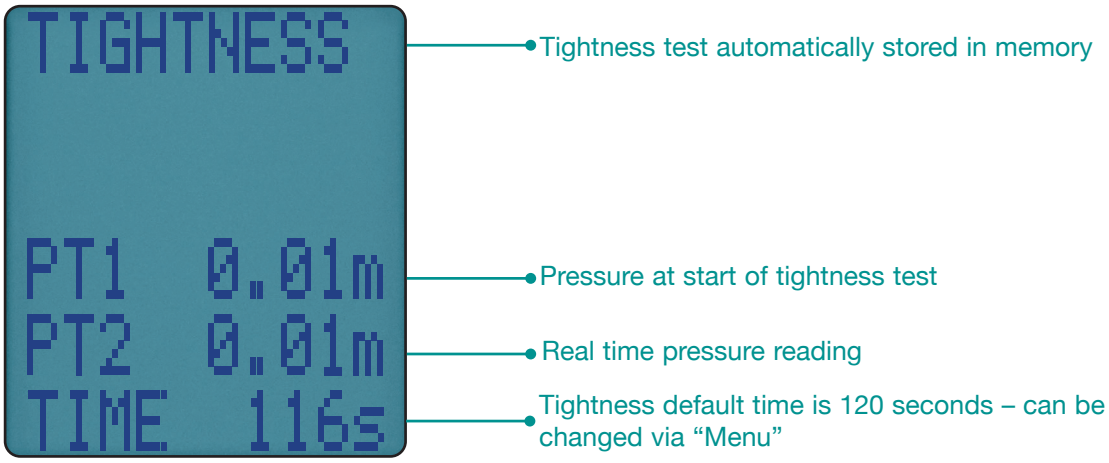


If let-by test fails rotate dial to another position to stop the test.

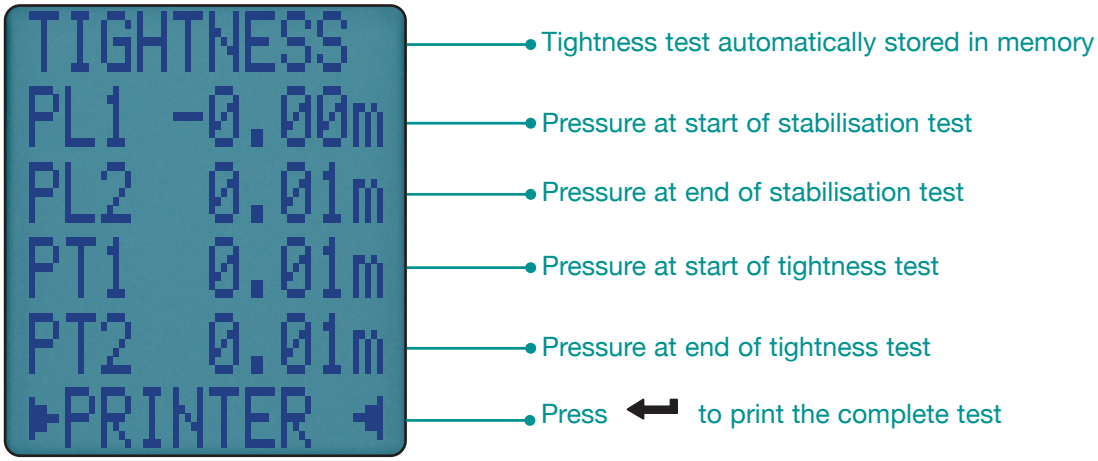
If Let-by test passes, adjust gas pressure for the tightness test & press ↵ to start stabilisation test – display shows:



When complete press ↵ to start tightness test:



When complete display shows:



SENDING REPORTS

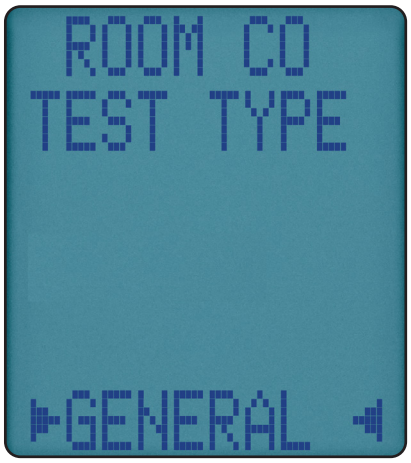
Let-by & Tightness reports are automatically stored. Page 18-20 explains how to view & print stored reports.

Press and release ᯤ then select either your optional KANE IRP printer or wirelessly to your APPS.

ROOM CO TESTING

Rotate dial to Room CO to measure & record room CO readings for up to 30 minutes.

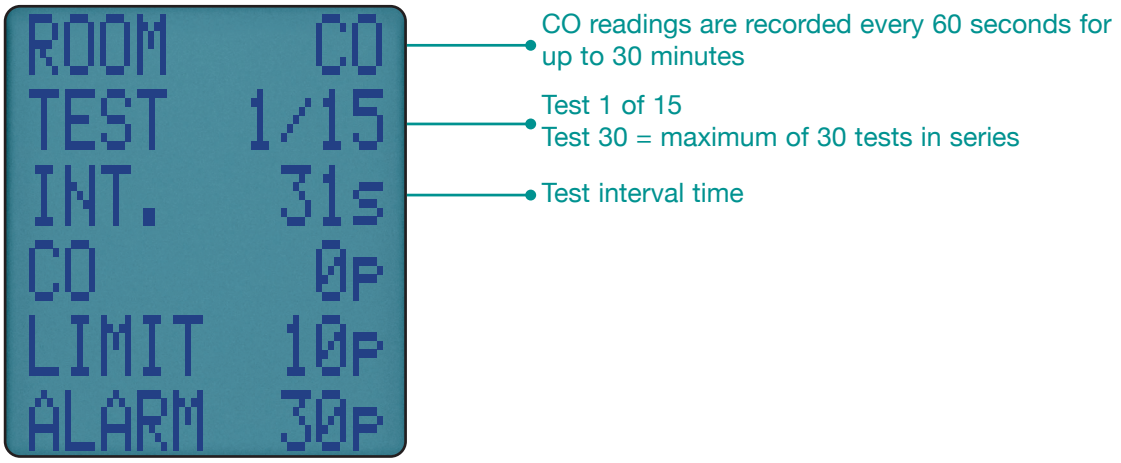
Use ▲▼ to select test type from the following options:



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 reading 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 ↵.

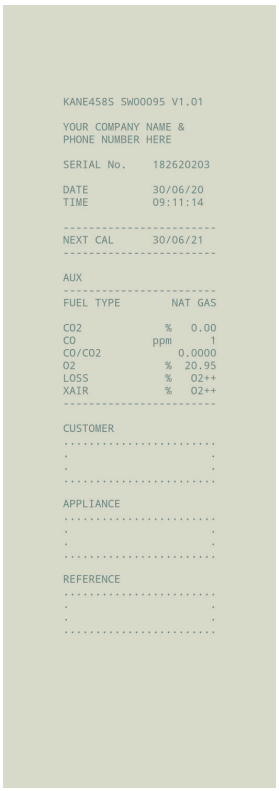
Otherwise it stops automatically after the pre-set time.

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

You can send your Room CO test log to your optional KANE IRP-2 printer by pressing ↵ or wirelessly using ▲ & ↵ to your App. See page 18-20.

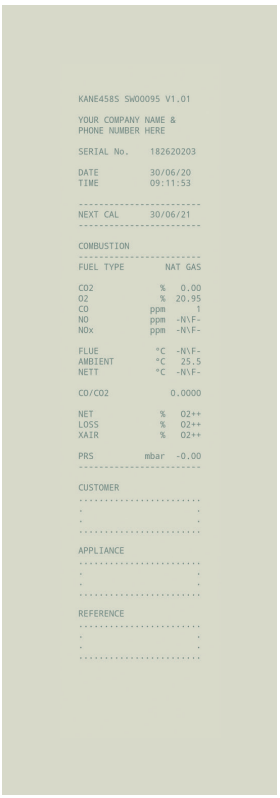
PRINTOUTS

Auxiliary



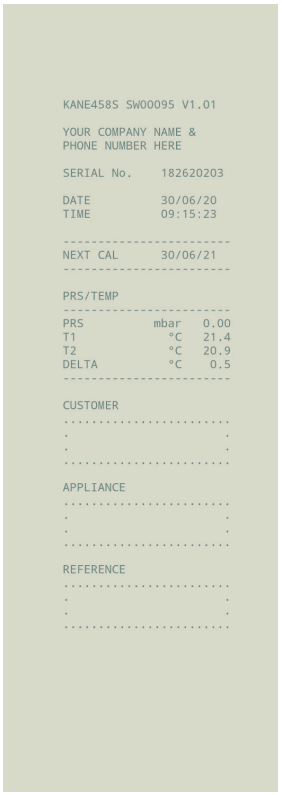
```
KANE458S SW00095 V1.01

YOUR COMPANY NAME &
PHONE NUMBER HERE

SERIAL No.     182620203

DATE           30/06/20
TIME           09:11:14

-----------------------
NEXT CAL       30/06/21
-----------------------

AUX
-----------------------
FUEL TYPE         NAT GAS

CO2                %   0.00
CO               ppm     1
CO/CO2                0.0000
O2                 %  20.95
LOSS               %   O2++
XAIR               %   O2++
-----------------------

CUSTOMER
.......................
.                     .
.                     .
.......................

APPLIANCE
.......................
.                     .
.                     .
.......................

REFERENCE
.......................
.                     .
.                     .
.......................
```

Combustion



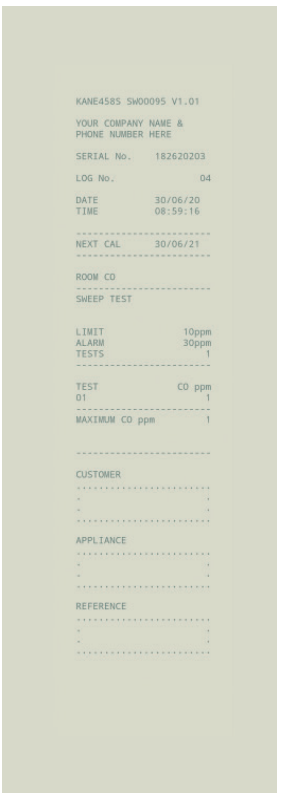
```
KANE458S SW00095 V1.01

YOUR COMPANY NAME &
PHONE NUMBER HERE

SERIAL No.     182620203

DATE           30/06/20
TIME           09:11:53

-----------------------
NEXT CAL       30/06/21
-----------------------

COMBUSTION
-----------------------
FUEL TYPE         NAT GAS

CO2                %   0.00
O2                 %  20.95
CO               ppm     1
NO               ppm  -N\F-
NOx              ppm  -N\F-

FLUE               °C  -N\F-
AMBIENT            °C   25.5
NETT               °C  -N\F-

CO/CO2                0.0000

NET                %   O2++
LOSS               %   O2++
XAIR               %   O2++

PRS             mbar   -0.00
-----------------------

CUSTOMER
.......................
.                     .
.                     .
.......................

APPLIANCE
.......................
.                     .
.                     .
.......................

REFERENCE
.......................
.                     .
.                     .
.......................
```

Pressure/Temp



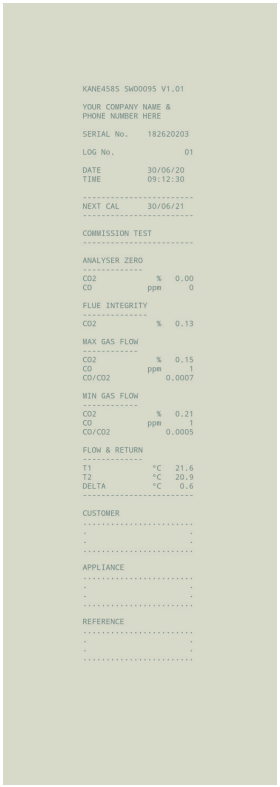
```
KANE458S SW00095 V1.01

YOUR COMPANY NAME &
PHONE NUMBER HERE

SERIAL No.     182620203

DATE           30/06/20
TIME           09:15:23

-----------------------
NEXT CAL       30/06/21
-----------------------

PRS/TEMP
-----------------------
PRS             mbar   0.00
T1                °C   21.4
T2                °C   20.9
DELTA             °C    0.5
-----------------------

CUSTOMER
.......................
.                     .
.                     .
.......................

APPLIANCE
.......................
.                     .
.                     .
.......................

REFERENCE
.......................
.                     .
.                     .
.......................
```

Sweep Test



```
KANE458S SW00095 V1.01

YOUR COMPANY NAME &
PHONE NUMBER HERE

SERIAL No.     182620203

LOG No.                04

DATE           30/06/20
TIME           08:59:16

-----------------------
NEXT CAL       30/06/21
-----------------------

ROOM CO
-----------------------
SWEEP TEST


LIMIT             10ppm
ALARM             30ppm
TESTS                 1
-----------------------

TEST              CO ppm
01                    1
-----------------------
MAXIMUM CO ppm        1

-----------------------

CUSTOMER
.......................
.                     .
.                     .
.......................

APPLIANCE
.......................
.                     .
.                     .
.......................

REFERENCE
.......................
.                     .
.                     .
.......................
```

Commission

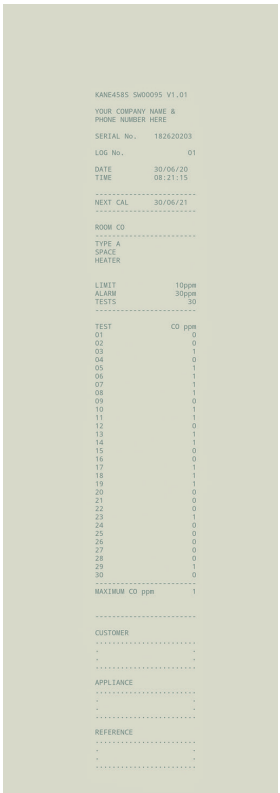


```
KANE458S SW00095 V1.01

YOUR COMPANY NAME &
PHONE NUMBER HERE

SERIAL No.     182620203

LOG No.                01

DATE           30/06/20
TIME           09:12:30

-----------------------
NEXT CAL       30/06/21
-----------------------

COMMISSION TEST
-----------------------

ANALYSER ZERO
-------------
CO2                %   0.00
CO               ppm     0

FLUE INTEGRITY
--------------
CO2                %   0.13

MAX GAS FLOW
------------
CO2                %   0.15
CO               ppm     1
CO/CO2                0.0007

MIN GAS FLOW
------------
CO2                %   0.21
CO               ppm     1
CO/CO2                0.0005

FLOW & RETURN
-------------
T1                °C   21.6
T2                °C   20.9
DELTA             °C    0.6
-----------------------

CUSTOMER
.......................
.                     .
.                     .
.......................

APPLIANCE
.......................
.                     .
.                     .
.......................

REFERENCE
.......................
.                     .
.                     .
.......................
```

Let by/Tightness

```
KANE458S SW00095 V1.01

YOUR COMPANY NAME &
PHONE NUMBER HERE

SERIAL No.     182620203

LOG No.                01

DATE           30/06/20
TIME           09:20:45

-----------------------
NEXT CAL       30/06/21
-----------------------

LET BY TEST
-----------------------
PRS 1           mbar   0.00
PRS 2           mbar   0.00
LET BY          MINS   1:00


TIGHTNESS TEST
-----------------------
PRS 1           mbar   0.00
PRS 2           mbar   0.01
DELTA           mbar  -0.00

STABILIS'N      MINS   1:00
TIGHTNESS       MINS   2:00
-----------------------

CUSTOMER
.......................
.                     .
.                     .
.......................

APPLIANCE
.......................
.                     .
.                     .
.......................

REFERENCE
.......................
.                     .
.                     .
.......................
```

Type A



```
KANE458S SW00095 V1.01

YOUR COMPANY NAME &
PHONE NUMBER 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


LIMIT             10ppm
ALARM             30ppm
TESTS                30
-----------------------

TEST              CO ppm
01                    0
02                    0
03                    1
04                    0
05                    1
06                    1
07                    1
08                    1
09                    0
10                    1
11                    1
12                    0
13                    1
14                    1
15                    0
16                    0
17                    1
18                    1
19                    1
20                    0
21                    0
22                    0
23                    1
24                    0
25                    0
26                    0
27                    0
28                    0
29                    1
30                    0
-----------------------
MAXIMUM CO ppm        1

-----------------------

CUSTOMER
.......................
.                     .
.                     .
.......................

APPLIANCE
.......................
.                     .
.                     .
.......................

REFERENCE
.......................
.                     .
.                     .
.......................
```

KANE LINK WIRELESS MEASUREMENT AND DATA TRANSFER

You can wirelessly connect optional KANE LINK devices to your analyser.

Rotate dial to KANE LINK on your analyser to manage how your analyser communicates with wireless devices.

To wirelessly transfer data to a connected smart device running our KANE Apps, select APP using ↵.

To ADD, REMOVE and check STATUS of optional KANE LINK devices select LINK using ▲ & ↵ buttons.

WPCP2 WIRELESS PIPE CLAMP

To add select it then enter its serial number using ▲ & ↵ buttons.

Enter its serial number using ▲ & ↵ buttons. Each clamp serial number must be 10 digits long.

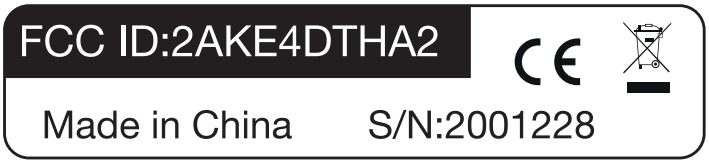
If longer use the last 10 digits. e.g. in this example only enter last 10 digits: 2105094301

DTHA2 ANEMOMETER

To add a DTHA2 anemometer select DTHA2 using ▲ & ↵ buttons.

Enter its serial number using ▲ & ↵ buttons. Each serial number must be 10 digits long

If shorter enter 0's to make up to 10. e.g. in this example enter 2001228 as 0002001228.



Other KANE LINK devices can be paired – Contact KANE for more details.

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%	±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		
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 & 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 LINK is in conformity with the relevant Union harmonization legislation below:

UK DIRECTIVE	
The Electromagnetic Compatibility Regulations 2016 (EMC)	
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (RoHS)	
Electrical Equipment (Safety) Regulations 2016	
EU DIRECTIVE	**TITLE**
201430EU	Electromagnetic Compatibility (EMC)
201165EU	Restriction of the use of certain hazardous substances in electrical & electronic equipment (RoHS)
2014/35	Low Voltage Directive (LVD)

The following harmonised standards & technical specifications have been applied:

CERTIFICATION

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

EMC (UK & EU)

EN50270:2015

SAFETY (UK & EU)

EN61010-1:2010

ROHS (UK & EU)

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, IEC 62321-8:2015

Signed for on behalf of:- Kane International Ltd.

01. July 2021

Paul Morrison
Engineering Manager

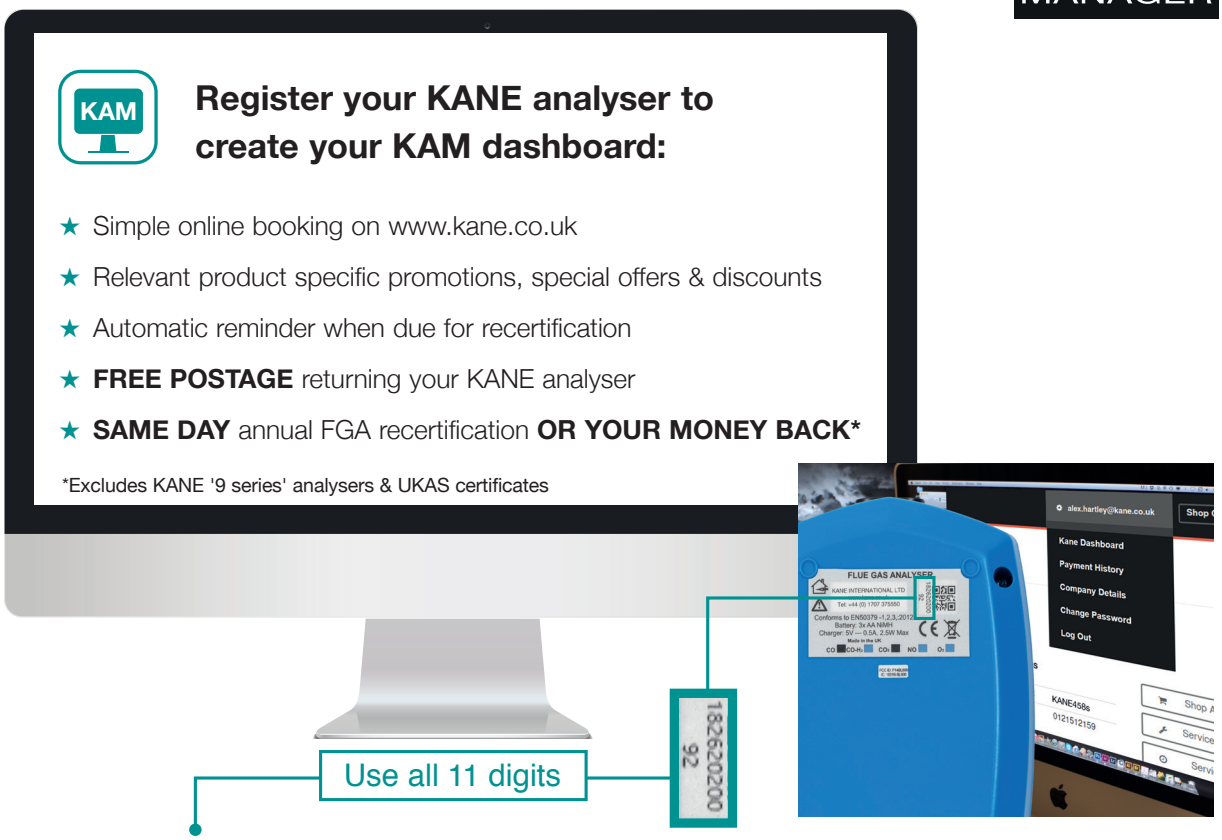
SERVICE – CALIBRATE – RECERTIFY

All analysers & pressure meters should be recertified annually.

Extend your KANE analyser & 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 recertification with FREE postage using www.kane.co.uk



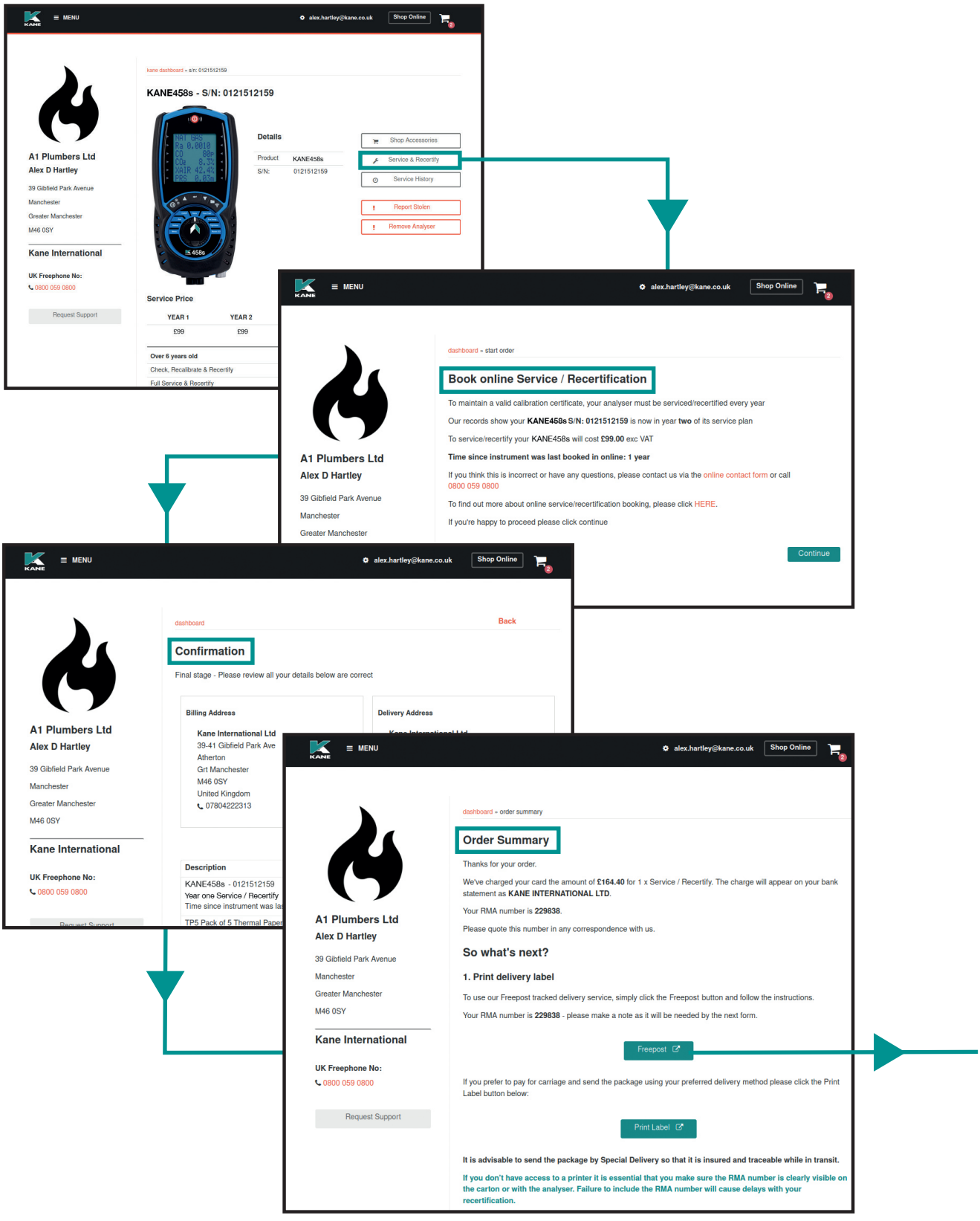
Please **register** your analyser at **www.kane.co.uk**
& download the full instruction manual from your KAM dashboard
PLEASE READ ALL SAFETY WARNINGS IN THE MANUAL

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 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

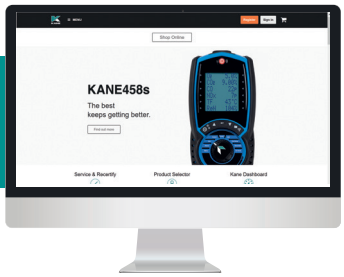
Your support - our way

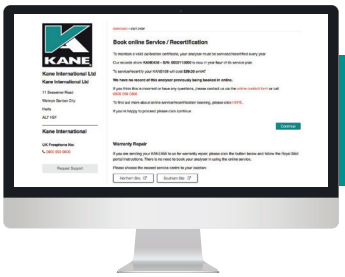


GUARANTEED SAME DAY DESPATCH

Analyser Service & Recertification

Register your analyser on www.kane.co.uk





Book & pay to Service & Recertify via your KAM dashboard

Select FREEPOST for tracked carriage - UK mainland only

Your analyser will be despatched on the same day we receive it...

OR YOUR MONEY BACK*

WHERE TO SEND YOUR ANALYSER

Northern Customer Service
Kane International Ltd
Gibfield Park Avenue
Atherton,
Manchester
M46 0SY, UK
e: nservice@kane.co.uk
t: 0800 059 0800

Outside UK Call +44 1707 375550

Southern & International Customer Service
Kane International Ltd
Kane House, 11 Bessemer Road
Welwyn Garden City
Hertfordshire
AL7 1GF, UK
e: sservice@kane.co.uk
t: 0800 059 0800

COLD WEATHER PRECAUTIONS

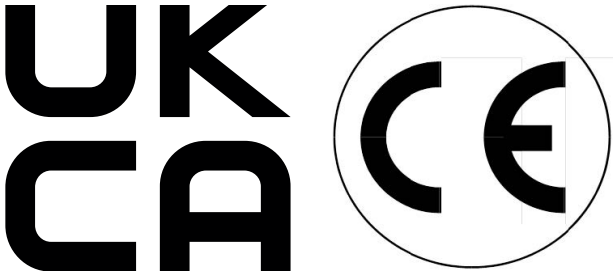
It is important you keep your flue gas analyser in a warm place overnight.

Electronic devices that become really cold, by being left in a vehicle overnight, suffer when taken into a warm room the next morning. Condensation may form which can affect the analyser performance & cause permanent damage.

Electrochemical sensors used in flue gas anlysers can be affected by condensation or water being sucked into the analyser, as the small apertures on top of sensors can become blocked with water, stopping sensors seeing flue gas. When this happens, oxygen or carbon dioxide reading will display as "—" & sensors may be permanently damaged.

If you think that your analyser is affected by condensation or water ingress, it may be possible to rectify the problem yourself. Simple leave the analyser running in a warm place, with the pump 'ON' sampling fresh air for a few hours (use mains adapter/battery charger if needed). If, after doing this, you still experience problems please contact our Service Centres.

THIS PRODUCT CONFORMS WITH THE FOLLOWING



PLEASE RECYCLE PACKAGING

MADE IN THE UK

Thank you for buying this analyser.

Before use, please register on our website

www.kane.co.uk

Scan the QR code to go directly to register your product online.

Kane International Ltd
Kane House, 11 Bessemer Road
Welwyn Garden City
Hertfordshire
AL7 1GF, UK
email: sales@kane.co.uk
telephone: 0800 059 0800