

KANE455

QUICK REFERENCE GUIDE





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 **ON / OFF**
Turns the analyser ON / OFF

 **PUMP**
Turns the pump ON / OFF
Hold button to zero pressure

 **BACKLIGHT**
Switches backlight & torch light ON / OFF

 **SEND / ENTER**
Send readings to printer
(Press button for 1 second.)
Send readings to memory
(Hold button down for 2+ secs.)



1. BEFORE USING ANALYSER CHECK THE FOLLOWING:

Particle filter is not dirty inside

Water trap and flue probe hose are empty of water

Water trap and rubber bung are fitted correctly to the analyser

Flue probe hose is connected properly to the flue gas inlet

Flue probe temperature plug is connected into T1 temperature connection

Please read the Safety Warnings in the User Manual

2. FRESH AIR PURGE

Position the flue probe in fresh air, then press the "On/Off" button. The analyser auto-calibrates for approximately 90 seconds. When complete...

Select "Ratio" on the dial. **In fresh air the CO reading = 0ppm**

Select "O₂/Eff" on the dial. **In fresh air the O₂ reading = 20.9%**

Select "Status" on the dial to view the following...

STATUS display

BAT	59	- Battery status. If less than 20 recharge or replace, (see section 10)
11 : 46 : 29		- Current time. Can be set via the "Menu", (see section 11)
15 / 05 / 08		- Current date. Can be set via the "Menu", (see section 11)
CAL	283	- Number of days until next check and calibration is required

Note: Boiler inlet air temperature can either be...

a) Set automatically by the flue probe during the fresh air purge

or b) Continuously measured if a thermocouple is plugged into the T2 socket

3. COMBUSTION TESTS

Select "Ratio" on the dial to check that the analyser is set for the correct fuel. To change fuel select MENU / SETUP / SET FUEL then use scroll and enter, (see section 11).

Position the flue probe as per the boiler manufacturer's instructions; typically the tip of the flue probe is inserted to the centre of the flue. The readings will stabilise after 60 seconds assuming the boiler conditions are stable.

The rotary switch can be used to display the following information...

RATIO display

NAT GAS	- Fuel type can be changed via "Menu", (see section 11)
R 0.0001	- CO/CO ₂ ratio
CO _P 12	- Carbon Monoxide, (ppm)
CO ₂ % 8.8	- Carbon Dioxide, (%)

Press SEND to print a full combustion test. (Also sends to PC if Bluetooth fitted).
Hold SEND for 2+ seconds to log a full combustion report.

O₂/EFF display

O ₂ % 5.4	- Oxygen left after combustion. Should be 20.9% in fresh air.
TF _C 55.1	- Flue temperature, (°C)
TI _C 17.2	- Inlet temperature. Normally set by flue probe during fresh air purge.
EfC% 98.3	- Condensing boiler efficiency (EfC). Can be changed via "Menu"

Press SEND to print a full combustion test. (Also sends to PC if Bluetooth fitted).
Hold SEND for 2+ seconds to log a full combustion report.

AUX display

O ₂ % 20.9	- The default AUX (auxiliary) display is shown
CO _P 00	The parameters on lines 1, 2, 3 and 4 can be set independently
11 : 55 : 02	To customise the AUX display select MENU / SCREEN / AUX.
BAT 59	They remain the AUX parameters until changed again by the user.

Press SEND to print a full combustion test. (Also sends to PC if Bluetooth fitted).
Hold SEND for 2+ seconds to log a full combustion report.

4. PRESSURE TEST (Also see section 9)



Select "Prs". The pump stops. Press the PUMP button to auto-zero the pressure sensor. Using the black connectors and manometer hose connect to P1 for single pressure or P1 and P2 for differential pressure.

PRS display


PRESSURE	- Defaults to smoothing 'off' on start-up. Can be changed via "Menu".
P -0.04	- Defaults to 'low' resolution on start-up. Can be changed via "Menu".
mbar	- Pressure units can be changed via "Menu".
12 : 56 : 29	- Displays time to enable manually timed tests.

Press SEND to print a pressure test. (Also sends to PC if Bluetooth fitted).
Hold SEND for 2+ seconds to log a pressure report.


5. LET-BY and TIGHTNESS TESTING (Also see section 9)

Select "Tightness". The pump stops. Press the PUMP button to auto-zero the pressure sensor. Select "yes" or "no" for the let-by test by using \triangle or ∇ , then press . Connect from the test point to P1 using a black connector and manometer hose. Adjust the gas pressure as you would with a "U" tube manometer. Press  to start either the let-by test or the stabilisation period...

LET BY	- Let-by test display.
P1 10.35	- Pressure at the start of the let-by test
P2 10.35	- Real time pressure reading
TIME 59	- Let-by default time is 1 minute. Can be changed via "Menu".

When complete adjust the gas pressure if necessary then press  to start the stabilisation period...

STABIL'N	- Stabilisation display.
P1 20.00	- Real time pressure reading
mbar	
TIME 59	- Stabilisation default time is 1 minute. Can be changed via "Menu".


When complete adjust the gas pressure if necessary then press  to start the tightness test...

TIGHTN'S	- Tightness test display.
P1 20.33	- Pressure at start of tightness test
P2 20.33	- Real time pressure reading
TIME 119	- Tightness default time is 2 minute. Can be changed via "Menu".

When complete the display will show...

LOG 06	- Let-by and tightness test are automatically stored as a log number
P1 20.33	- Pressure at start of tightness test
P2 20.26	- Pressure at end of tightness test
PRINT \downarrow	- The test can be printed immediately or later from the memory

Note:

The analyser's memory can store up to 20 tightness tests. Tightness tests are logged automatically therefore the tightness section of the memory will be full after the 20th tightness test is complete. Before the 21st tightness test can be performed the tightness section of the memory must be cleared. To do this select MENU / REPORT / TIGHTN'S / DEL ALL / YES then press 

6. DIFFERENTIAL TEMPERATURE

Select "Diff Temp" to measure flow, return and differential temperatures

DIFF TEMP display

TEMP		- Pump automatically switches off when dial is moved to Diff Temp
T1c	60.1	- Use the T1 connection for the flow temperature sensor
T2c	47.0	- Use the T2 connection for the return temperature sensor
ΔT_c	13.1	- Real time temperature difference

Press SEND to print a differential temperature test. (Also sends to PC if Bluetooth fitted).
Hold SEND for 2+ seconds to log a differential temperature report.

7. ROOM CO TESTING

Select "Room CO" for CO investigations. Please refer to user manual.

ROOM CO display

ROOM	CO	- Duration of this test is variable from 0 to 30 minutes as per BS7967
CO _P	00	- Real time CO reading, (ppm)
TEST	14	- Test 00 = start. To stop the Room CO test press the PUMP button
LOG	01	- The complete Room CO test is automatically stored as a log number

8. OTHER DISPLAY CODES

-PO- = Pump Off

-OC- = Open Circuit on temperature input

9. FOR BEST PRESSURE SENSOR ACCURACY

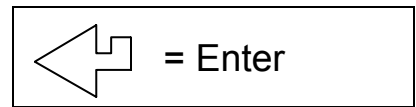
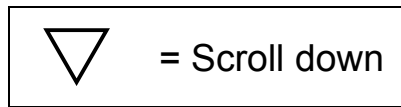
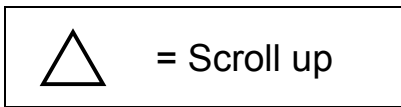
- 1) Switch the analyser on for 5 minutes to let the temperature stabilise.
- 2) Zero the pressure sensor when the analyser in the exact position that it will be used.

10. TO FULLY CHARGE NiMH RECHARGEABLE BATTERIES

- 1) The analyser must be switched on.
- 2) Connect the charger and switched it on; charging indicator illuminates.
- 3) Switch the analyser off; the display will show "BATTERY CHARGING".
- 4) The BAT status number of fully charged NiMH batteries is typically 70+

11. USING THE MENU

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



MAIN MENU	SUB MENU	OPTIONS / COMMENTS
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SETUP	SET FUEL	NAT GAS, L OIL (28/35 sec), PROPANE, BUTANE, LPG, PELLETS (Wood)
	N ← C → G	EfN = nett efficiency, EfG = gross efficiency, EfC = condensing efficiency
	SET TIME	Uses Military time. 7am = 07:00, 7pm = 19:00
	SET DATE	Uses DD-MM-YY format

PRESSURE	SMOOTH	OFF = normal response. ON = slower (damped) response
	RESOLVE	LOW = normal. HIGH = displays to an extra decimal place
	PS UNITS	mbar, mmH ₂ O, Pa, kPa, PSI, mmHg, hPa, InH ₂ O
	TIMES	LET-BY = Set duration of let-by test in minutes. Default = 1 minute STABIL'N = Set duration of stabilisation in minutes. Default = 1 minute TIGHTN'S = Set duration of tightness test in minutes. Default = 2 minute

REPORT	COMB'N	Stored combustion tests, VIEW, DEL ALL or EXIT (max = 99 tests)
	PRESSURE	Stored pressure tests, VIEW, DEL ALL or EXIT (max = 20 tests)
	TIGHTN'S	Stored let-by and tightness tests, VIEW, DEL ALL or EXIT, (20 tests)
	TEMP	Stored differential temperature tests, VIEW, DEL ALL or EXIT (20 tests)
	ROOM CO	Stored room CO tests, VIEW, DEL ALL or EXIT (max = 20 tests)

SCREEN	CONTRAST	Factory setting is 04
	AUX	Enables users to customise the parameters on the AUX display User can set any parameter on lines 1, 2, 3 and 4
	HEADER	Sets printout header, 2 lines, 20 characters per line

SERVICE	CODE	Password protected for authorised service agents. Leave set to 0000.
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To EXIT EACH Sub MENU select EXIT.

To EXIT the MENU move the rotary switch to any position other than "Menu".

Any changes that have not been "entered" will be ignored.

12. Printouts

```

K455 1.0
YOUR COMPANY NAME &
PHONE NUMBER HERE

TEST          10

DATE          15/05/08
TIME          12:00:08

COMBUSTION
.....
FUEL          NAT  GAS
O2 %          5.4
CO2 %         8.8
CO ppm        12
FLUE °C       55.1
INLT °C       17.2
NETT °C       37.9

EFF (C)       98.3
LOSSES        1.7
XAIR %        34.8

CO/CO2        0.0001
PRS  MBAR     0.00

.....
Customer
.....
Appliance
.....
Ref.
.....
    
```

```

K455 1.0
YOUR COMPANY NAME &
PHONE NUMBER HERE

PRESSURE
.....
LOG           04
TIME 12:56 15/05/08

PRS  MBAR     6.28

.....
Customer
.....
Appliance
.....
Ref.
.....
    
```

```

K455 1.0
YOUR COMPANY NAME &
PHONE NUMBER HERE

DIFF TEMP
.....
LOG           03
TIME 12:10 15/05/08

T1 °C        60.1
T2 °C        47.0
ΔT °C        13.1

.....
Customer
.....
Appliance
.....
Ref.
.....
    
```

```

K455 1.0
YOUR COMPANY NAME &
PHONE NUMBER HERE

LOG           04
TIME 11:53 15/05/08

Let By Test
.....
PRS_1 MBAR    10.12
PRS_2 MBAR    10.11
LET BY MINS   1:00

Tightness Test
.....
PRS_1 MBAR    20.12
PRS_2 MBAR    20.10
ΔPRS MBAR     -0.02
STABIL'N MINS 1:00
TIGHTN'S MINS 2:00

.....
Customer
.....
Appliance
.....
Ref.
.....
    
```

```

K455 1.0
YOUR COMPANY NAME &
PHONE NUMBER HERE

ROOM CO TEST
.....
LOG           01
TIME 12:50 15/05/08

TEST          CO ppm
0             00
1             00
2             10
3             04
4             01
5             00
6             00
7             10
8             03
9             00
10            00
11            00
12            07
13            11
14            02
15            00

.....
MAXIMUM CO    11

.....
Customer
.....
Appliance
.....
Ref.
.....
    
```