

# NEW OXYGEN MONITORING

The Albion O2 Plus Oxygen Analyser brings Zirconium precision to energy monitoring for all user levels

**ENERGY MANAGEMENT AT ITS BEST**

The level of oxygen in spent fuel gases is a reliable indicator of combustion efficiency and if measured accurately provides for the economic consumption of fuel in Boilers, Furnaces, Kilns, Ovens and Heating Plant of all types.

The value of Zirconium Oxide as an accurate monitor of Oxygen levels has been known about for many years. Until recently however, its cost has only made it justifiable for larger installations.

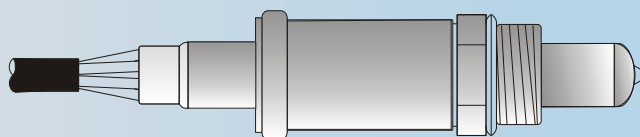
The Albion O2 Plus analyser exploits the latest developments in fuel efficient car engines by utilising sensors developed for that application.

Albion's remarkable new Oxygen Analyser enables you to make highly accurate estimates of fuel savings at a very low initial cost.

## FEATURES

- ULTRA FAST RESPONSE AND DISPLAY TIME
- MILLI AMP + VOLTAGE ANALOGUE OUTPUTS
- MICROPROCESSOR TECHNOLOGY
- ALL PARAMETERS USER PROGRAMMABLE
- ALARM RELAY OUTPUTS
- PANEL MOUNT AND WALL MOUNT VERSIONS WITH IP60 RATED ENCLOSURES
- ALPHA NUMERIC 16 DIGIT LCD DISPLAY
- REMOTE AND DIRECT SENSING APPLICATIONS
- TEMPERATURE INPUT AND DISPLAY
- 50/60Hz 230/110/115 VOLT MAINS SUPPLY
- AUTO AND MANUAL CALIBRATION MODES

## ZIRCONIUM SENSOR



## TECHNOLOGY

## ALBION O2A PLUS THE BEST RESULTS IN THE FINAL ANALYSIS

Considerable attention has been paid to the creation of a rugged, easily installed instrument which will operate reliably with the minimum of maintenance.

The final Albion production version of the Analyser is a first class instrument that provides fuel engineers and energy managers with the following:

- 1) A continuous digital display of the percentage oxygen in the sample.
  - 2) A continuous linear voltage or milli amp output signal for recording or feedback for control systems
  - 3) A fuel rich alarm signal.
- Special features also provide for warning of sensor failure and for checking the calibration.

### THREE STAGES OF APPLICATION

1) At the simplest level, the Analyser can be used merely to display oxygen levels accurately and continuously. This provides an extremely valuable guide for users of manually adjusted plant. It can also provide the measure of potential savings from investment in improved plant and combustion controls.

2) It provides analogue signals for input to a recorder, data logger or computer based control and monitoring system.

3) A particularly valuable application is its use in conjunction with a set point controller and a ratio controller. This can actuate pre-programmed changes of oxygen levels in the furnace atmosphere in kilns, or, equally, can trim excess air in boilers.

### CONTINUOUS CONTROL AND EXCEPTIONAL ECONOMY

Excess air causes increased losses from a furnace or boiler because air which is not required in the combustion process carries sensible heat into the atmosphere at a level in line with the exhaust gas temperature.

Another and often undetected hazard is insufficient air, which means that useful energy can be lost in unburned gas. Once a plant has been commissioned with optimum combustion conditions at every level, the Albion O2A Plus is the most reliable way of detecting and displaying any measurable change in those conditions. This information provides a basis for assessing the fuel saving potential offered by equipment

installed to give an improved trim of combustion air.

The percentage reduction in actual fuel usage depends on existing efficiency and assessed level of improvement and can be calculated as in the example given, or by applying the following formula:

Reduced fuel input =

$$\frac{\text{Input} \times (100 - \text{Existing stack loss \%})}{(100 - \text{Assessed improved stack loss \%})}$$

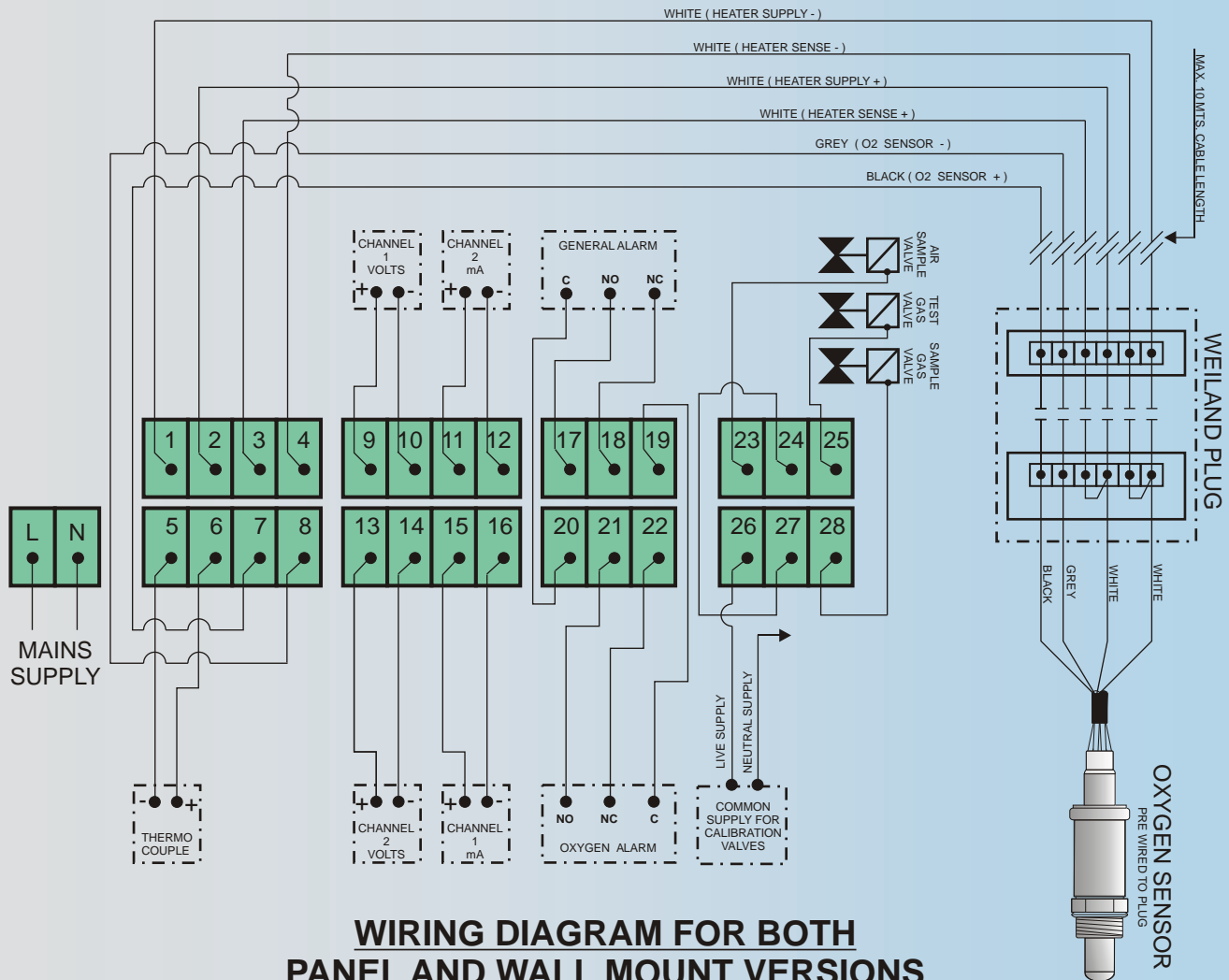
### EXAMPLE OF SAVING

**Reduction of excess air from 60% to 15% with flue gas temperature 800°C.**

**At 60%:**  
 useful heat 43 units [to process]  
 wasted heat 57 units (flue loss)  
 100 units (fuel used)

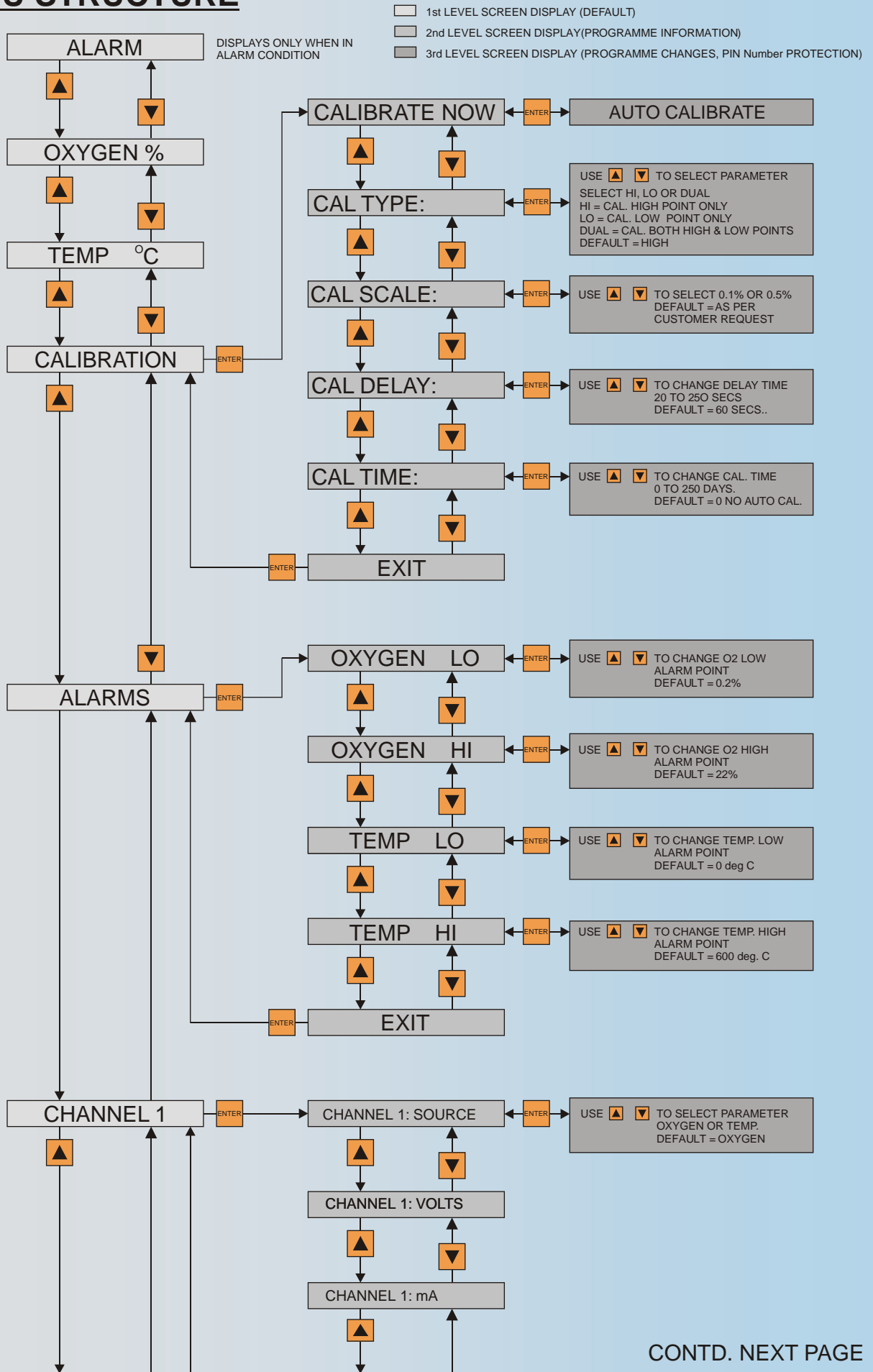
**At 15%:**  
 useful heat 43 units (to process)  
 wasted heat 37 units (46% flue loss)  
 80 units (fuel used)

**Saving 20%**



## WIRING DIAGRAM FOR BOTH PANEL AND WALL MOUNT VERSIONS

# MENU STRUCTURE



CONTD. NEXT PAGE

# MENU STRUCTURE contd.

- 1st LEVEL SCREEN DISPLAY (DEFAULT)
- 2nd LEVEL SCREEN DISPLAY (PROGRAMME INFORMATION)
- 3rd LEVEL SCREEN DISPLAY (PROGRAMME CHANGES, PIN Number PROTECTION)

