

ELECTROLINK/ALPHALINK

Improved Efficiency with Electrolink

Traditional approaches to the problem of maintaining air and fuel ratios on modulating burner plant have been based on characterising cams and linkages. Whilst relatively cost effective, they suffer from a number of disadvantages:

- Time consuming to set up
- Unwieldy cam and linkage assemblies mounted on the boiler front
- Eventual wear of the mechanical components. Resulting in hysteresis effects

The Electrolink air-fuel mapping processor uses many of the advantages of modern technology to overcome these problems, whilst retaining the ability to interface with traditional, as well as future Burner Management Controllers.

The microprocessor at the centre of this new controller will drive bi-directional servomotors. Typically these will be fitted to the primary and secondary air dampers and primary and secondary fuel valves.

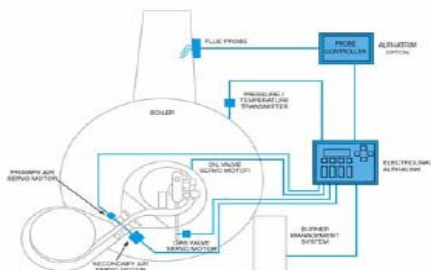
By adjusting the servomotors, and continuously monitoring their positions, Electrolink will match, exactly, the combustion rate, to that required by the target set point – boiler pressure or temperature. The system has the ability to store data for up to four fuel curves, making it suitable for all types of burner installation.

An integrated liquid crystal display presents the user with English text information (including European language options) with a key-array permitting access to all site programmable data. Password protection provides the necessary access limitation for commissioned parameters.

Control Philosophy

During the commissioning phase, between 5 and 16 points for each servomotor will be replaced in the Electrolink non-volatile memory.

When modulating, the processor carries out continuous positional calculations to ensure that the servomotors follow the curves precisely. Using this method, virtually infinite resolution is achieved.



Electrolink/Alphalink plus Alphatrim in dual-fuel, rotary cup burner application

Alphalink

By upgrading to the Alphalink System, further enhancements become available.

These include:

- 2nd Set point to allow night set back
- Communications options via 2RS485 channels
- Option of upgrading to oxygen trim

Communications options

Communications ports allow access to data which can be used by supervisory computers such as our own System Manager.

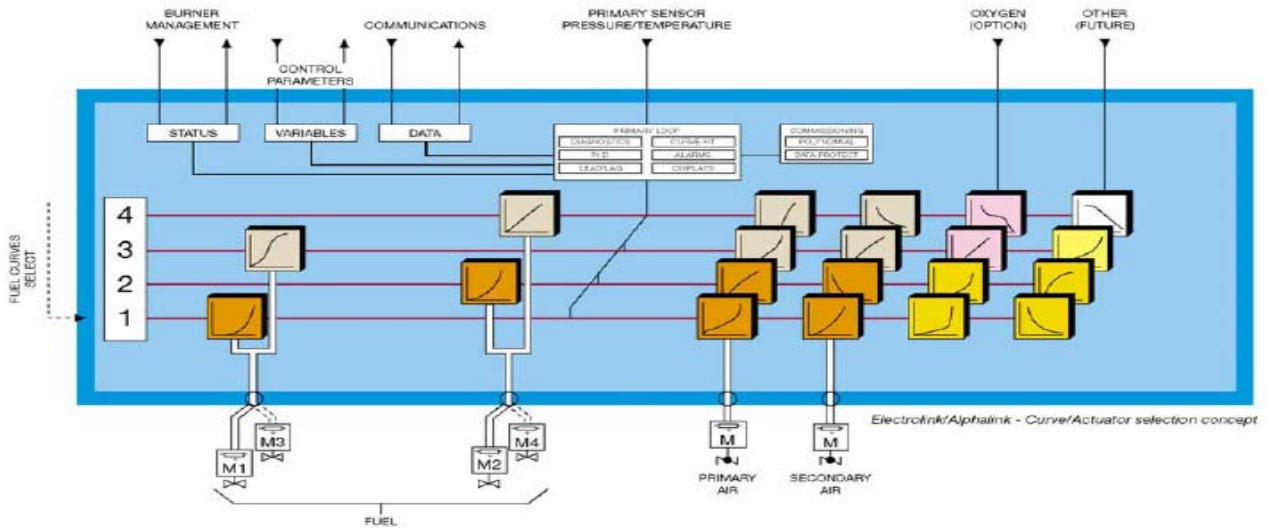
Alphatrim-Oxygen Trim and Flue Gas Temperature Monitoring

To further enhance the capabilities of the Alphalink, an oxygen trim option with flue gas temperature monitoring is available. The addition of this unit will ensure that originally commissioned air/fuel ratio conditions are maintained. Any deviation from the required oxygen set points resulting from changes in fuel stoichiometry, atmospheric conditions and boiler resistance, will be automatically corrected.

Flue gas temperature measurement provides additional data, to enable first order stack loss to be computed and gross boiler efficiency to be displayed.



SPECIFICATION



Electrolink/Alphalink Specification – Controller

Enclosure	
Type	Din, panel-mounting case, moulded in A.B.S.
Protection	Facia protected to I.P.65.
Size	Width 184 mm, Height 144 mm, Depth – total 170 mm (130 mm behind fascia)
Electrical	
Voltage	110/230V
Tolerance	+10 to –15%
Consumption	50VA
Frequency	47 to 63 Hz
Environmental	
Temperature	0 to 55°C
Humidity	0 to 95% non condensing
Interface Signals	
BMS inputs	24 Vac
BMS outputs	Volt free contact (230V @2A)
Motor drive	S.S.R.
Motor position	Precision servo pot.
Process signals	4-20mA./0-10V
Control	
Hardware	Microprocessor based with continuous 'watch-dog' monitor
Control actions	P.I.D.
Motor drives	Up to 4 per profile (additional servos may be switched in)
Positional accuracy	Better than ± 0.2 .deg
Operator Interface	
Display	2 line-by-16 character, Alphanumeric L.C.D.
Keys	16 key sealed membrane with tactile feedback
Communication (Alphalink Only)	
Channel A	RS485
Channel B	RS485

Alphatrim Specification - Controller

Enclosure	
Type	Wall mounting steel enclosure
Size	Width 445 mm, Height 220 mm, Depth 80 mm
Electrical	
Voltage	110/230V
Tolerance	+10% to –15%
Consumption	50VA
Frequency	47 to 63 Hz
Environmental	
Temperature	0 to 55°C
Humidity	0 to 95% non condensing
Output Signal	
Oxygen	Lin 4-20 mA
Exhaust Gas Temp.	Lin 4-20 mA

Alphatrim Specification - Probe

General	
Type	Zirconium cell with sintered stainless filter
Overall Response	15 seconds for 65% change
Probe Material	Stainless steel
Gas Temperature	540°C
Weight	3 kg

For further information on combustion equipment please contact the head office:

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Hamworthy Combustion Engineering Limited reserve the right to make changes and improvements which may necessitate alteration to the specification without prior notice

HAMWORTHY
 COMBUSTION

Incorporating:

PEABODY ENGINEERING
 AIROIL - FLAREGAS
 CHENTRONICS