

Industrial Burner Air-Fuel Ratio Optimizing System



# Flame Brain

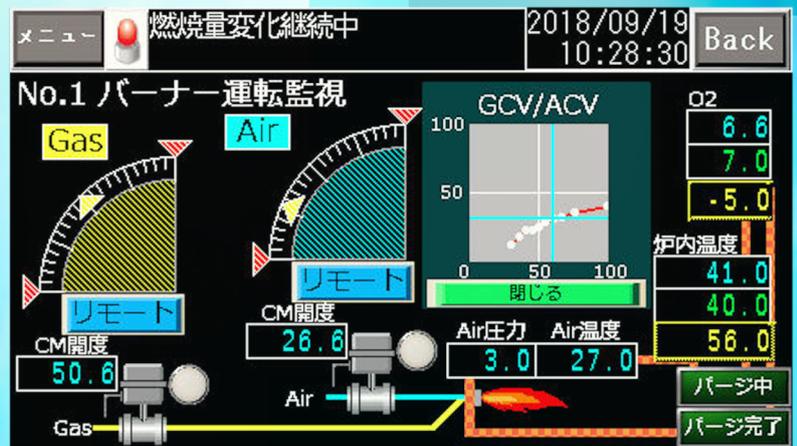
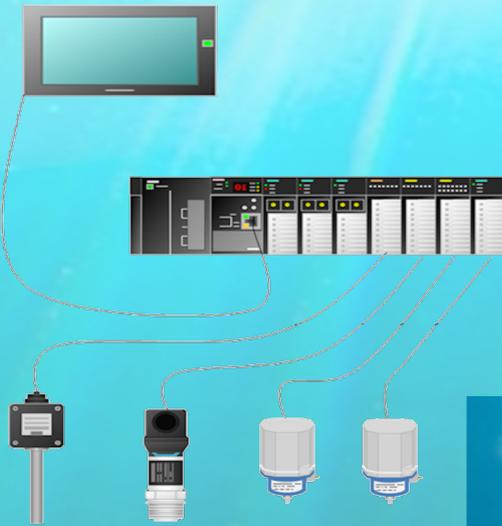
Little More Ecology, Little More Economy  
The New Way of FEMS for Your Plant Optimization

## EL-OT(Electrical Linkage Oxygen Trim) Control

Replaced to the Electrical Linkage to Control the Combustion Volume as same with Mechanical Linkage. Trim Control is to Monitor the Residual Oxygen Concentration in Exhaust Gas and Adjust the Air Fuel Ratio to Optimize the Combustion Volume.

## Instinctive Operation

Just to Prepare the Electrical Linkage Table on HMI  
Then, Input the Target Value to Operate  
(Oxygen Concentration, In-Furnace Temperature)



## High Performance with Minimum Component

PLC, HMI Oxygen Sensor, Pressure Transmitter, and Electrical Actuator(optional)  
Either Way Available Modify the Existing or Build the New Panel

## Suitable with the New or Existing Equipment

Class G : Electrical Actuator Drive Type  
Class S : Control Motor(ON/OFF) Drive Type  
Available Up to 14 Burners to Control  
Optional: Recuperator Type, Exhaust Gas Sampling Unit

## Advantages of Flame Brain

- ① Optimize the Plant Energy Volume to Save the Earth
- ② The Newest Way to Optimize the Air-Fuel Ratio for Industrial Burners
- ③ Suitable for both Gas Burner and Oil Burner with Same System
- ④ No Need the Flow Meter for Air and Fuel
- ⑤ No Need the Seasonal Adjusting Maintenance
- ⑥ Generate the Turndown Performance of the Burner
- ⑦ Optimize the Air-Fuel Ratio in All the Combustion Volume



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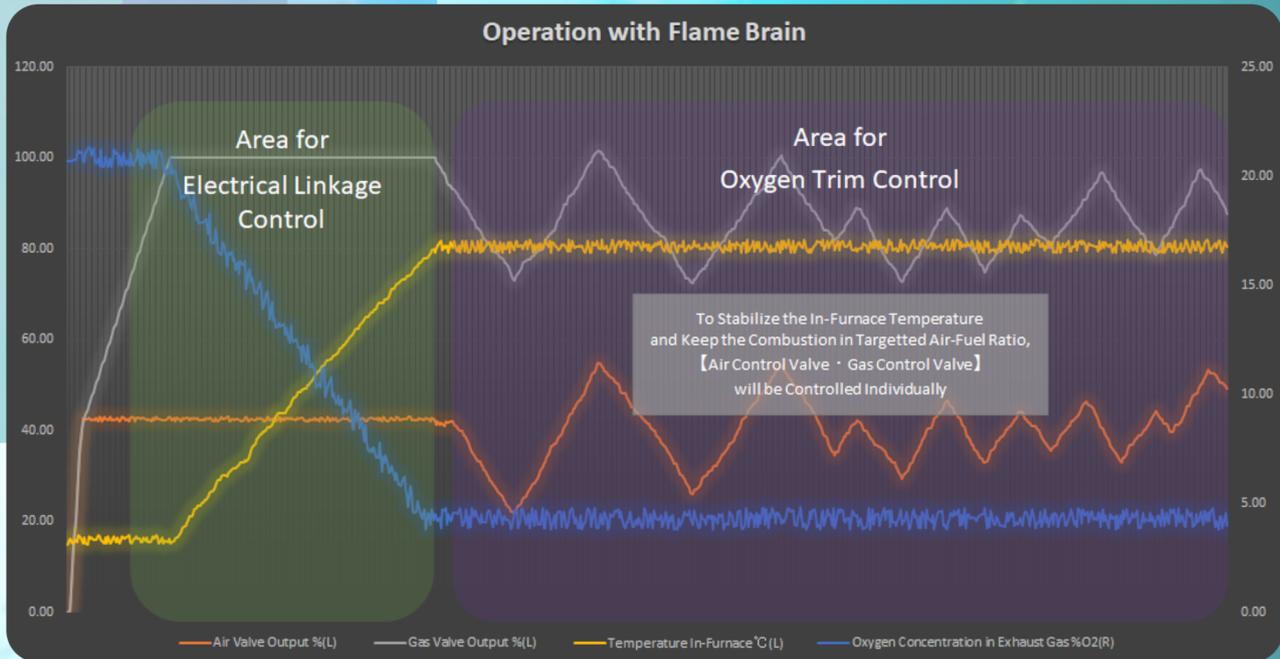
# Flame Brain

フレイム・ブレイン

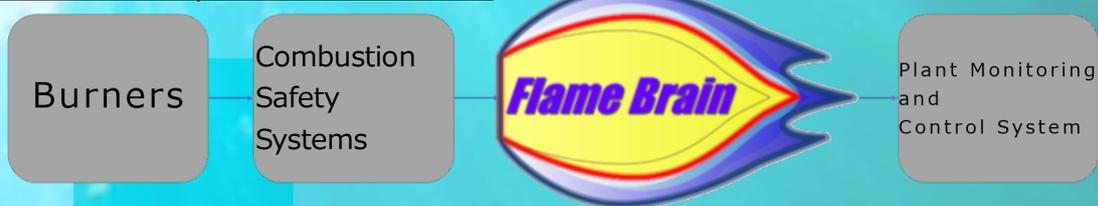
## Suitable Application for Flame Brain

Any Industry Application(Steel, Vehicle, Food, or Chemical)  
with the Industrial Combustion Equipments

※Note: Flame Brain is unsuitable for the application with air infiltration due to measure the oxygen concentration in exhaust gas



## Ensure the Safety with Flame Brain



### Basic Components of Flame Brain System

Flame Brain prepares following 2 different models as based on the control valve drive type

Class G : Electrical Actuator(4-20mA Input) Drive

Class S : Control Motor(ON/OFF) Drive

#### ( 1 ) Basic Model Specifications

- |                                                |                      |
|------------------------------------------------|----------------------|
| ①Oxygen Sensor                                 | 1 unit / Furnace     |
| ②Pressure Sensor for Combustion Air Monitoring | 1 unit / Burner      |
| ③Flame Brain Controller                        | 1~14 Burner / System |
| ④Flame Brain HMI                               | 1 unit / System      |
| ⑤Control Valve for Fuel                        | 1 unit / Burner      |
| ⑥Control Valve for Air                         | 1 unit / Burner      |

#### ( 2 ) Recuperator Model (HEX Type) \*Option

- |                                            |                 |
|--------------------------------------------|-----------------|
| ⑦RTD(Pt100) for Pre-Heated Air Temperature | 1 unit / Burner |
|--------------------------------------------|-----------------|

#### ( 3 ) High Temp. Gas (700 degC or higher) Type \*Option

- |                                    |                  |
|------------------------------------|------------------|
| ⑧Sampling Pipe Unit (Ejector Type) | 1 unit / Furnace |
| ⑨Sealing Chamber for Dust          | 1 unit / Furnace |

**※You want to test our Flame Brain at your plant? Please ask!**

Your Inquiry to  
Mr. Kubota



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