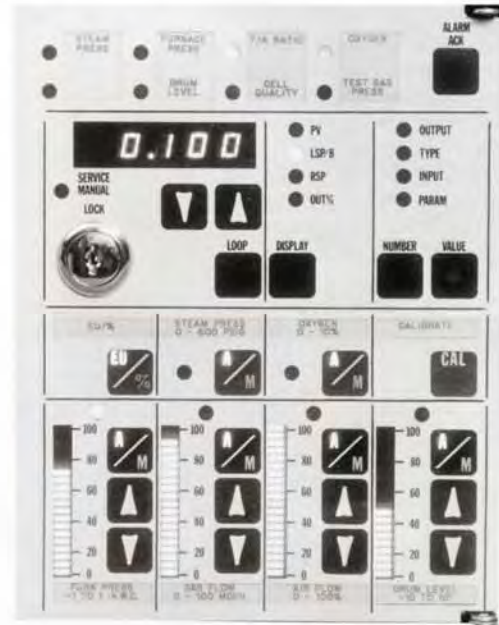


Combustion Controller

- Six Manual/Automatic stations
- Four controlled outputs backed up with track and hold logic
- Four M/A stations with separate increase/decrease pushbuttons and output bargraph indicators
- Blockware designed with 60 different control algorithms
- Scan rate of 4 times/second
- Four trend outputs
- Eight alarm first out annunciator
- 4-1/2 digit display for loop and configuration data and error message display
- Built-in diagnostics with error display
- Process variables and setpoints displayed in either percent or engineering units
- Configurations and tuning directly from front panel
- Key-lock protection of configuration and tuning parameters
- Customized labels for loop and alarm identification
- Optional lap top computer available for configuration loading
- Special function blocks allow automatic recalibration of all probe-type O₂ and SO_x Analyzer packages

MODEL 1500A CONTROLLER

The Model 1500A Controller is an autonomous multi-loop controller that can operate independently or within a Distributed Control System. Each 1500A can control complex systems consisting of as many as six loops with four controlled outputs. These controlled outputs are continuously tracked by its track and hold board, which ensures sage process operation under abnormal controller malfunction.



Model 1500A Controller

Typical control applications include entire boiler, soaking pit, reheat furnace, process heater and pipeline override control systems. Other applications include multi-probe averaging and sulfur emissions monitoring.

This microprocessor-based system is specifically designed to utilize a building block concept, which permits easy configuration of a wide range of complex control applications. A flexible set of blockware allows control systems to be designed to meet specific customer applications without computer programming knowledge. External hardware is not required to enter new configurations. Control system configurations are stored in its memory

The Model 1500A is designed with adequate memory and programmable capability to perform as a multi-loop controller, as well as an integral part of a Distributed Control System.

MEMBRANE FRONT PANEL

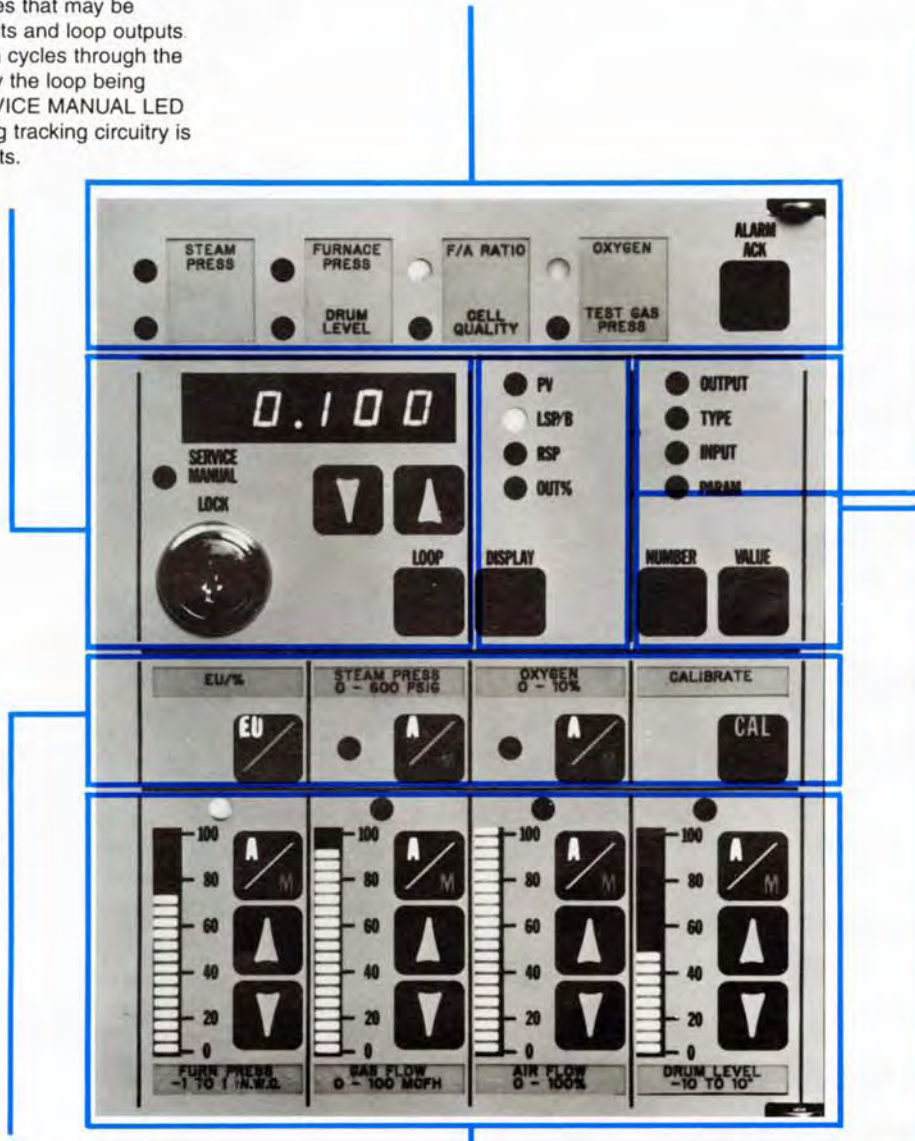
The membrane front panel makes the 1500A suited for harsh industrial environments; it is sealed and lockable, preventing damage from dirt and grime buildup, and prevents unauthorized entry to the electronic enclosure. The panel utilizes highly reliable membrane switch technology. This technology establishes more reliable electronics due to single printed circuit board

The INCR-DECR pushbuttons under the 4-1/2 digit LED display will change the displayed variable. The key switch prevents unauthorized personnel from changing configuration and tuning data. Examples of variables that may be changed are setpoints and loop outputs. The loop pushbutton cycles through the loop LEDs to identify the loop being displayed. The SERVICE MANUAL LED is lit when the analog tracking circuitry is controlling the outputs.

construction and elimination of mechanical switches. Other benefits include highly visible bargraph indications for loop outputs and lower maintenance/calibration costs due to the elimination of incandescent lamps and mechanical pushbuttons. In addition, the membrane switches are easily activated with an operating force of six to eight ounces per square inch.

An eight alarm first out annunciator panel with customized legends and an alarm acknowledge pushbutton.

The DISPLAY pushbutton is used to select the process variable, local setpoint or bias, remote setpoint, or percent output of the loop identified by the LOOP LEDs.



The four auxiliary backlit pushbuttons may be configured to select percent or engineering units, perform automatic oxygen calibration, or serve as remote/local pushbuttons. The two pushbuttons with adjacent loop LEDs may also be configured to be Auto/Manual pushbuttons, and serve as auxiliary loops internal to a control system.

The four controlled outputs are indicated on separate bargraph indicators. Each primary loop has its own backlit Auto/Manual pushbutton and separate increase/decrease pushbuttons. The loop LEDs above the meters are used by the LOOP pushbutton to select the loop being displayed on the digital readout. The customized loop legends are used to specify the process variable and its engineering units.

The NUMBER AND VALUE pushbuttons identify configuration information and are used along with the shared INCR-DECR pushbuttons to enter configuration and tuning data.

MODEL 1500A CONTROLLER

The Model 1500A Controller is a multi-loop controller that can operate independently, or within a Distributed Control System. Control system configurations are stored in its memory. Each 1500A can execute logic configurations consisting of as many as six loops with four backed up outputs. Should the microprocessor fail, these four control outputs can be manually adjusted.

The Model 1500A can accept 9 contact inputs, 7 analog inputs, 8 analog outputs and 7 relay or TTL outputs. The unit can handle either current or voltage I/O. The self-contained switching power supply operates on line voltage. An optional 24 VDC external auxiliary power connection will maintain controlled outputs (outputs 1-4) during servicing or in the event of 115 volt power loss.

Six major electronic subassemblies make up the Model 1500A. They are the power supply card, the analog I/O card, the processor card, the interface card, the track and hold service manual board, and the front panel assembly

The track and hold logic designed into the Model 1500A eliminates the need for separate analog backup stations. During servicing the unit can be switched to the tracking circuitry by means of the Computer Mode Request-Neutral-Service manual (CMR-NEUTRAL-MANUAL) switch located on the track and hold circuit board. The operator retains manual control, with indication of the outputs through the increase/decrease pushbuttons adjacent to the output bargraph indicators. Service manual STATUS is indicated by an LED on the front panel.

The control configuration is stored in battery backed CMOS memory on the interface card. The battery protects the contents of CMOS memory for approximately 10 years in case of loss of power. The actual configuration is entered into CMOS memory from the front panel but can also be entered via a lap top computer or a computer station, which may be part of the control system. Configuration and tuning are under key-lock protection.

MAJOR ELECTRONIC SUBASSEMBLIES

