ZB110/ZB230 FIREYE BURNERLOGIX™ Z CONTROL   Bulletin BLZ-1001

The Fireye® BurnerLogix™ Z System expands on the standard BurnerLogix Y System by combining boiler control functions with the same burner management control found in the Y system. The result is a single compact package that can directly control the boiler's output firing rate based on either input pressure or temperature or both.

The BurnerLogix Z System is designed to provide the proper burner sequencing, ignition and flame monitoring protection on automatically ignited oil, gas, and combination fuel burners. Through the display, the operator programs the desired setpoint, cut in, cut out and modulating range and with PID control, the BurnerLogix Z System controls the burner/boiler from start up through shutdown, precisely maintaining the desired setpoint.

The BurnerLogix Z System continuously monitors interlocks and limits found in the L1-3 and 3-P circuits as it programs the burner/blower motor, ignition and fuel valves to provide for proper and safe burner operation. VFD and LCD displays are available that may be either plugged in or mounted remotely to give full language descriptors of current status and diagnostic lockout information as well as provide a user friendly menu system to make setting the boiler parameters easy and understandable.

Through SMART LED'S, located on the front cover or through the display interface, the control provides current operating status and lockout information in the event of a safety shutdown. Following are some of the major control and monitor capabilities provided by the BurnerLogix Z System:

- **Operating Control Function** for automatic sequencing of the boiler system to start and stop the boiler to meet system demand.
- **Full Modulation Control** of fuel and combustion air through the firing rate motor to meet system demand.
- **Solid State Sensors** to monitor steam pressure, water temperature, stack temperature, boiler water temperature, or outdoor air temperature.
- **High Pressure and Temperature Alarm Limits** based on inputs from solid state sensors. Exceeded limits will open interlock circuit to the flame safeguard control for shutdown of the burner and boiler.
- **Cold Start Thermal Shock Protection** to slowly increase the burner firing rate on a cold start to limit mechanical stress due to thermal differences.
- **Multiple Lead/Lag** operation of two or more boilers.
- **Remote Communication Capability** allows reading and writing of all setpoint information.
- **Assured low fire cut off** prevents unnecessary stress caused by burner shut down at high fire.
- **Auto / Manual firing rate** control with bumpless transfer

A complete BurnerLogix Z System includes the ZB110 (ZB230) chassis equipped with the type of flame amplifier required for the application, appropriate flame detector, plug-in programmer module, appropriate temperature/pressure transducer, wiring base and alpha-numeric display. Interchangeable YP1XX type programmer modules allow for complete versatility in selection of function, timing and flame failure response times.

The ZB110 (ZB230) is a chassis/flame amplifier module complete with mounting screws and blank display module. The display module (BLV512 or BLL510), if required, must be ordered separately. Functions such as pre-purge time, recycling or non-recycling interlocks, high fire proving interlock, and trial for ignition timing of the pilot and main flame are determined by the programmer module. The BurnerLogix Z System can be used with ultra-violet, autocheck infrared, flame rod, self-check ultraviolet flame scanners or direct coupled by choosing the proper chassis/flame amplifier module.

Wiring bases for the BurnerLogix Z control are available pre-wired with 4 foot lead wires color coded and marked for easy installation or with an integral terminal block capable of a accepting up to 2 X 14 AWG wires. The wiring base terminal block is available with knockouts for conduit or open ended for cabinet mounting. The pigtail wiring base is 4" X 5" and the terminal block wiring base is 4" X 7".

Additional functions of the BurnerLogix Z System include:

- A non-volatile memory which allows the control to remember its history and present position even when power is interrupted.
- A consistent flame signal read-out via display module or 4-20 mA output.
- Read-out of main fuel operational hours and complete cycles via display module.
- Modbus communications via RS485 multi-drop link.
- Proof of fuel valve closure during off cycle.
- Burn-in time of program parameters occurs after 8 hours of main valve on time.
- A run/check switch which allows the operator to stop the program sequence in any of four different positions (Purge, PTFI, MTFI or Auto).
- Remote Display mounting with NEMA 4 protection.
- Remote Reset
- Keypad selectable language readout.
- Revert to pilot can increase burner turn down.

BurnerLogix Z Chassis/Flame Amplifier Module

PART NUMBER	DESCRIPTION
ZB110UV	120 VAC input with UV non self-check amplifier
ZB110UVSC	120 VAC input with UV self-check amplifier
ZB110IR	120 VAC input with IR auto-check amplifier
ZB110IR2	120 VAC input with IR auto-check amplifier (special application only - consult factory)
ZB230UV	230 VAC input with UV non self-check amplifier
ZB230UVSC	230 VAC input with UV self-check amplifier
ZB230IR	230 VAC input with IR auto-check amplifier

BurnerLogix Z Programmer Modules

PART NUMBER	DESCRIPTION
YP100	Keypad selectable parameters, non-recycle operation, modulation, open damper proving, 4 second FFRT
YP102	Keypad selectable parameters, non-recycle operation, modulation, open damper proving, 2 second FFRT
YP113	Keypad selectable parameters, non-recycle operation, modulation, open damper proving, 1 second FFRT
YP118	Keypad selectable parameters, non-recycle operation, modulation, open damper proving, indefinite pilot hold, revert to pilot from auto, 1 second FFRT
YP138	Keypad selectable parameters, non-recycle operation, modulation, open damper proving, indefinite pilot hold, revert to pilot from auto, 4 second FFRT

BurnerLogix Z Displays

PART NUMBER	DESCRIPTION
BLV512	Display, 2 line X 16 characters, VFD, with cable, NEMA 4
BLL510	Display, 2 line X 16 characters, LCD, with cable, NEMA 4

BurnerLogix Z Wiring Bases

PART NUMBER	DESCRIPTION
60-2850-1	Pigtail wires, 4 foot long, 4"W x 5"H
60-2852-1	Closed base with terminal block and knockouts, 4"W x 7"H
60-2854-1	Open base with terminal block. 4"W x 7"H

BurnerLogix Z Accessories

PART NUMBER	DESCRIPTION
129-178-4	Kit, remote mounting, BurnerLogix display, 4 ft. cable, provides NEMA 4 protection
129-178-8	Kit, remote mounting, BurnerLogix display, 8 ft. cable, provides NEMA 4 protection
BLD500	Blank display module, included with ZB module
IT1000	Alarm annunciation system using wireless technology
PPC6000	Parallel Positioning System
61-5745-3	Shutter drive assembly for redundant self-check 45UV5-1005 scanners