



SDC-1001
APRIL 19, 2013

PPC4000 SALES DEMO CASE



INTRODUCTION:

The SDC-4001 PPC4000 demo case provides an easy to use versatile method to demonstrate the capabilities of the Fireeye PPC4000 stand alone parallel positioning control. The SDC-4001 comes complete with the Fireeye YB100 flame safeguard control along with the standard NXD410 keypad display and two FX04 (4 Nm) MODbus servomotors . Additionally, the Air servomotor is equipped with a quick disconnect to allow the presenter to demonstrate both gas and oil profiles by adding an optional FX series servomotor.

The SDC-4001 also has three Digital Inputs that can be programmed to demonstrate the versatility of the PPC4000 to fit any single burner fuel burning system. Three of the user configurable relays are hardwired to indicator lights to provide additional indication of the PPC4000's flexibility. Switches for Air Flow, Proof of Closure (POC) and Flame signal allow the presenter to demonstrate a variety of normal and abnormal operating sequences.

Long life Neon indicator lights provide a visual indication of key elements of the system: Load Demand, Ignition, Main Fuel and Alarm.

Three multi turn potentiometers provide analog signal simulation to represent the system pressure or temperature plus two other Auxiliary signals such as stack temperature or water temperature.

The SDC-4001 can also be used to test PPC4000 controls, displays, servomotors and other components.



DESCRIPTION OF OPERATION:

The demo case has been fully checked out and loaded with both gas and oil curves. The digital inputs have been programmed to demonstrate some common uses of a digital input. The programmable relays are wired and programmed to indicate: high fire reached and low fire reached. Both a physical burner on/off switch as well as the ability to start and stop the burner from the display are provided. The accompanying wiring diagram shows how each component is wired to the PPC4000. Being familiar with the PPC4000 and using bulletin PPC-4001 will help get the most out of this case. Please read the manual!

Before powering the demo up, please check that all connectors and wires are in place. Connectors or wires may come loose during shipping. The SDC-4001 is only designed for operation on 120 VAC, 50/60 Hz.

After checking all connections set:

The Burner switch to OFF

Digital input switch 1 to ON. Digital input switch 2 selects set point 1 or 2 and should be in the OFF position for set point 1 selection. Digital input switch 3 is not currently assigned.

The Flame Simulator switch to AUTO

The Flame Simulator is set to match the YB110, Ultra Violet (UV), Infra Red (IR), and Flame Rectification (FR).

Now plug the line cord in and turn the power switch to on. After a short time, the NXD410 display will indicate the current burner status.

Turn the Burner switch ON. The PPC4000 should start through the normal start up sequence, the air drive should open the air only (the fuel drives do not have to open during purge) and the burner should fire and modulate to high fire.

NOTE:

If the burner does not start, check the display first. The set point will be set to 100 PSI with a cut in of 90 (-10) and a cut out of 110 (+10). If the actual value is not below the cut in, the burner will not start. Next check the displays to be sure that Burner Select button on the display has been set to ON (LED on).

Programmable Relays.

You will note, the RELAY 1 light illuminates when the AIR drive reaches the high fire position and purge begins. When the AIR drive begins to move to the ignition (P2) position, RELAY 1 light goes out and RELAY 3 light illuminates when low fire is reached. Relay 3 light will go out when the burner modulates above low fire by more than 10 degrees. RELAY 2 light is not programmed. See Relay operation under the Relay Setup menu. (This function will be available in the future)



Burner Switch.

The Burner Switch on the demo is wired directly in series with the L1-3 circuit of the YB110. Opening this switch immediately shuts the burner off without returning to low fire first.

Interlock Switch.

The Interlock switch wired in series between the YB110 terminal 3 and terminal P. This causes a safety shut down and lockout of the YB110. Also wired in this circuit is the safety relay circuit of the PPC4000.

Profile Switch.

The profile switch selects between profile 1 and 2, typically gas and oil, and is wired between the M terminal of the YB110 and the appropriate terminals on the PPC4000. Please see bulletin PPC-4001 for more details.

Digital Inputs.

The digital inputs are configured as follows: Digital Input 1 is set for Burner On, Digital Input 2 is set for Set Point Select. The digital inputs are programmed under the Digital Input Setup menu.

Flame Signal

The flame signal switch has two positions: OFF and AUTO. This allows the demonstration of flame failure and normal operations. The flame simulator can be set to simulate the three common types of flame detectors, Ultra Violet (UV), Infra Red (IR) and Flame Rectification (FR) depending on where the rotary Flame Simulator switch is set.

Load Simulator or Process Control Variable (PCV)

The multi turn potentiometer will provide a full-scale range to simulate the pressure or temperature of the system. This allows for demonstration of the modulation response as well as the effect of P + I control.

Servo Motors

The SDC-4001 employs two FX04 servo motors located on the graphic display. These motors have no end switches only a feedback potentiometer and associated electronics. When power is applied to the demo case, these motors will find their P0 (off) position and display 1.0 degrees. The motors are set up for MODbus address 1 (Air) and 2 (Fuel) via a rotary switch located under the motor cover. Please see the PPC-4001 bulletin for details.



PPC4000 configuration for use in SDC-4001 demo

KEYPAD SETUP

1. BURNER ON USED
2. LOW FIR HOLD UNUSED
3. AUTO MANUAL UNUSED
4. SEQUENCING UNUSED

DIGITAL INPUT SETUP

1. DI 1 BURNER CONTROL / AND
2. DI 2 SETPOINT 2 SELECT
3. DI 3 – DI 10 UNUSED

	SENSOR 1	SENSOR 2
TYPE	STEAM	WATER
RANGE	200 PSI	32 – 752 F

	SETPOINT 1	SETPOINT 2
SENSOR USED	1	1
LIMIT TYPE	DEV	DEV
SETPOINT	100.0 PSI	50.0 PSI
CUT IN	10.0 PSI	0.0 PSI
CUT OUT	10.0 PSI	10.0 PSI
P-BAND	10.0 PSI	3.0 PSI
INTEGRAL	75	5
DERIVATIVE	0	0
HIGH MARGIN	190.0 PSI	190.0 PSI
HIGH LIMIT	125.0 PSI	125.0 PSI

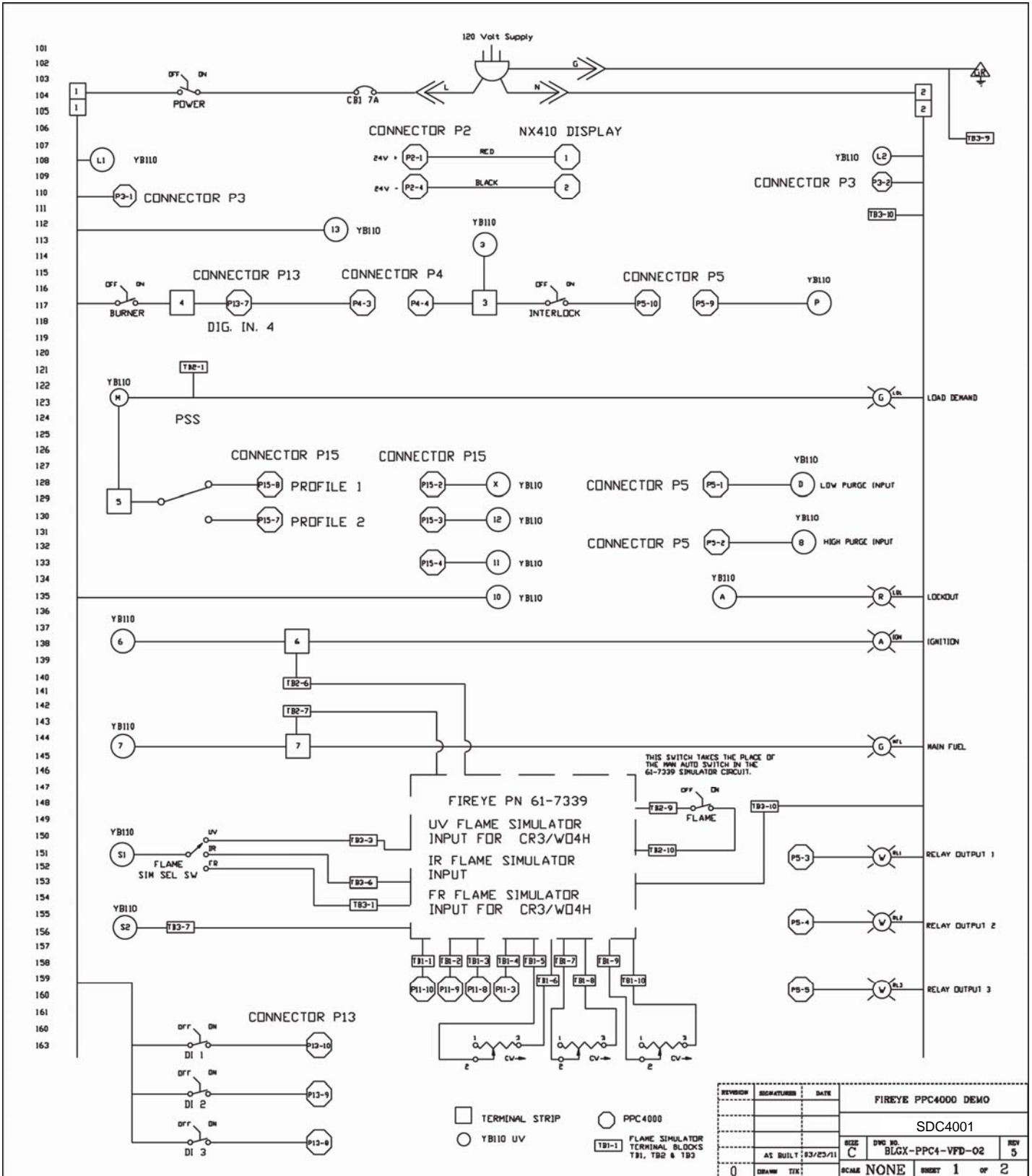
In servo setup sub menu servos installed must be learned

	SERVO 1	SERVO 2
NAME	AIR	GAS
ASSIGNMENT	4,3,2,1	2,1
DIRECTION	CW	CCW
PROFILE POSITION	DEGREES	DEGREES
P00	1.0	1.0
P01	88.0	1.0
P02	10.0	10.0
P03	5.0	5.0
P04	10.0	10.0
P05	15.0	15.0
P06	20.0	20.0
P07	25.0	25.0
P08	30.0	30.0
P09	35.0	35.0
P10	40.0	40.0

P11 and up increase by 5 until 85 (High Fire)



Wiring





NOTICE

When Fireeye products are combined with equipment manufactured by other and/or into systems designed or manufactured by others, the Fireeye warranty, as stated in its General Terms and Conditions of Sale, pertains only to the Fireeye products and not to any other equipment or to the combined system or its overall performance.

WARRANTIES

FIREYE guarantees for *one year from the date of installation or 18 months from date of manufacture* of its products to replace, or, at its option, to repair any product or part thereof (except lamps and photocells) which is found defective in material or workmanship or which otherwise fails to conform to the description of the product on the face of its sales order. **THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES AND FIREYE MAKES NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.** Except as specifically stated in these general terms and conditions of sale, remedies with respect to any product or part number manufactured or sold by Fireeye shall be limited exclusively to the right to replacement or repair as above provided. In no event shall Fireeye be liable for consequential or special damages of any nature that may arise in connection with such product or part.



FIREYE
3 Manchester Road
Derry, New Hampshire 03038 USA
www.fireeye.com

SDC-1001
APRIL 19, 2013
Supersedes January 5, 2012