



PPC4000 Wiring Application Guide

WR-00-2-0500-0-009 (2020/04)

FLAME SAFEGUARD BY OPTIONS

For most applications, use a BurnerLogix YB110 flame safeguard with the YP100 programmer or the BurnerPRO BP110UVFR-Sx(M)(P). Specific flame safeguards are listed below for special options.

- Revert to pilot – YB110 with YP118 or YP138 programmer
- Low fire hold -- YB110 with YP118 or YP138 programmer
- Valve proving – BP110UVFR-SxMP
- Infrared scanner – YB110IR or YB110IR2 with YP1xx programmer
- Ultraviolet and flame rod simultaneously – BP110UVFR-Sx(M)(P)
- Ultraviolet self-check – YB110UVSC with YP1xx programmer
- Direct coupled (to Phoenix or Insight scanners) – YB110DC with YP1xx programmer
- Expanded annunciation – YB110 with YP1xx programmer and YZ300 annunciator
- Direct spark for oil – YB110 with YP1xx programmer or BP110UVFR-Sx(M)

IMPORTANT NOTES ABOUT WIRING DIAGRAMS

1. Wiring diagrams are generic. Where there are multiple options, these are outlined so that one can be chosen (such as for a steam or a water limit option).
2. Up to ten servos can be connected. Up to four servos can be used with a specific profile. The wiring example shows five servos connected with the last two receiving power from an external power supply. The internal power supply for the servos can supply up to 60W of power, so the need for an external power supply entirely depends upon the power requirements of the connected servos. The power requirements are as follows: FX04 (7.5W), FX20 (35W) and FX50 (38W). If there were three FX04 and two FX20 servos in a system, this would total 92.5W. This is in excess of the available 60W. The two options in this scenario would be to either put all five servos on an external 120W power supply or to put the three FX04 servos and one FX20 servo on the internal power supply and put the remaining FX20 servo on an external 60W power supply.
3. When using the YZ300 annunciator, any unused limits must be individually jumpered.
4. Digital input 1 is used for the Burner On/Off switch. This must be programmed as *DIGITAL INPUT SETUP → DI 1 → USE = BURNER CONTROL*. If the burner control switch on the NXD410 or NXD410TS (user interface) is to be used as well set *DIGITAL INPUT SETUP → DI 1 → ACTION = AND*. The burner control switch on the user interface must also be enabled by programming *KEYPAD SETUP → BURNER ON/OFF = USED*.
5. Messages from the YZ300 annunciator can be customized using the YZ300P software with the UC485 USB to RS485 converter. Connection cable ED512-x (-2, -4 or -8 depending upon cable length in feet) is also required. See bulletin YZEM-3001 for addition instructions. All YZ300 first-out annunciation messages will be displayed on the BLV512 or BLL510 connected to the YB110 and are also available via Modbus.
6. Fuel selection between gas and oil is shown using a single switch connected to a relay. This could also be done directly via a multi-pole switch.



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IMPORTANT NOTES ABOUT WIRING DIAGRAMS (CONTINUED)

7. The optional NXTSD507HD (7") or NXTSD512HD (12") touchscreens use the external Modbus connection for communication. When these screens are connected, this connection is not available for use.
8. Connecting a VFD to the PPC4000 requires the addition of the NXCESVFD add-on card.
9. **Diagrams are optimized to print at 11x17 size or larger.**



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WIRING DIAGRAMS BY FEATURE

Diagram Number	User Interface	Control	Program	Exp. Annun.	Firing Rate	O ₂ Trim Control	VFD	VFD Bypass	Valve Proving	Dual Fuel
PPC4000-1	NXD410	RM7800/40E,L RM7845A	---	---	PID	---	---	---	---	---
PPC4000-2	NXD410	RM7800/40E,L RM7845A	---	---	External	---	---	---	---	---
PPC4000-3	NXD410TS	RM7800/40E,L RM7845A	---	---	PID	---	---	---	---	---
PPC4000-4	NXD410TS	RM7800/40E,L RM7845A	---	---	External	---	---	---	---	---
PPC4000-5	NXD410	YB110	YP1xx	---	PID	---	---	---	---	---
PPC4000-6	NXD410	YB110	YP1xx	---	External	---	---	---	---	---
PPC4000-7	NXD410TS	YB110	YP1xx	---	PID	---	---	---	---	---
PPC4000-8	NXD410TS	YB110	YP1xx	---	External	---	---	---	---	---
PPC4000-9	NXD410	BP110UVFR-SxMP	---	---	PID	---	---	---	Yes	---
PPC4000-10	NXD410	BP110UVFR-SxMP	---	---	External	---	---	---	Yes	---
PPC4000-11	NXD410TS	BP110UVFR-SxMP	---	---	PID	---	---	---	Yes	---
PPC4000-12	NXD410TS	BP110UVFR-SxMP	---	---	External	---	---	---	Yes	---
PPC4000-13	NXD410	BP110UVFR-Sx(M)	---	---	PID	---	---	---	---	---
PPC4000-14	NXD410	BP110UVFR-Sx(M)	---	---	External	---	---	---	---	---
PPC4000-15	NXD410TS	BP110UVFR-Sx(M)	---	---	PID	---	---	---	---	---
PPC4000-16	NXD410TS	BP110UVFR-Sx(M)	---	---	External	---	---	---	---	---
PPC4000-17	NXD410	YB110	YP1xx	YZ300	PID	FXO2TRIM-1	ACS550	Yes	---	Yes
PPC4000-18	NXD410	YB110	YP1xx	YZ300	PID	NXCESO2	ACS550	Yes	---	Yes
PPC4000-19	NXD410TS	YB110	YP1xx	YZ300	PID	FXO2TRIM-1	ACS550	Yes	---	Yes



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WIRING DIAGRAMS BY FEATURE (CONTINUED)

Diagram Number	User Interface	Control	Program	Exp. Annun.	Firing Rate	O ₂ Trim Control	VFD	VFD Bypass	Valve Proving	Dual Fuel
PPC4000-33	NXD410	BP110UVFR-SxMP	---	---	PID	FXO2TRIM-1	ACS550	Yes	Yes	Yes
PPC4000-34	NXD410	BP110UVFR-SxMP	---	---	PID	NXCESO2	ACS550	Yes	Yes	Yes
PPC4000-35	NXD410TS	BP110UVFR-SxMP	---	---	PID	FXO2TRIM-1	ACS550	Yes	Yes	Yes
PPC4000-36	NXD410TS	BP110UVFR-SxMP	---	---	PID	NXCESO2	ACS550	Yes	Yes	Yes
PPC4000-37	NXD410	BP110UVFR-SxMP	---	---	PID	FXO2TRIM-1	ACS550	---	Yes	Yes
PPC4000-38	NXD410	BP110UVFR-SxMP	---	---	PID	NXCESO2	ACS550	---	Yes	Yes
PPC4000-39	NXD410TS	BP110UVFR-SxMP	---	---	PID	FXO2TRIM-1	ACS550	---	Yes	Yes
PPC4000-40	NXD410TS	BP110UVFR-SxMP	---	---	PID	NXCESO2	ACS550	---	Yes	Yes
PPC4000-41	NXD410	BP110UVFR-Sx(M)	---	---	PID	FXO2TRIM-1	ACS550	Yes	---	Yes
PPC4000-42	NXD410	BP110UVFR-Sx(M)	---	---	PID	NXCESO2	ACS550	Yes	---	Yes
PPC4000-43	NXD410TS	BP110UVFR-Sx(M)	---	---	PID	FXO2TRIM-1	ACS550	Yes	---	Yes
PPC4000-44	NXD410TS	BP110UVFR-Sx(M)	---	---	PID	NXCESO2	ACS550	Yes	---	Yes
PPC4000-45	NXD410	BP110UVFR-Sx(M)	---	---	PID	FXO2TRIM-1	ACS550	---	---	Yes
PPC4000-46	NXD410	BP110UVFR-Sx(M)	---	---	PID	NXCESO2	ACS550	---	---	Yes
PPC4000-47	NXD410TS	BP110UVFR-Sx(M)	---	---	PID	FXO2TRIM-1	ACS550	---	---	Yes
PPC4000-48	NXD410TS	BP110UVFR-Sx(M)	---	---	PID	NXCESO2	ACS550	---	---	













