



# Installation Instructions

Part No. 23XR04053101

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## INTRODUCTION

This document provides guidance in the installation of the 23XR PIC6 Retrofit Kit used to upgrade panels with ICVC controls system installed to the newer PIC6 control system.

## Tools/Materials Required

- 23XR PIC6 retrofit kit
- digital multimeter
- Molex®<sup>1</sup> pin extractor
- safety glasses
- gloves
- cutting tool for door

**Table 1 — 23XR Retrofit Kit Contents**

PART NO.	DESCRIPTION	QTY
23XR04102301	Controls Arrangement	1
23XR04101207	Control Panel	1
23XR04000369	20-COMM-H HVAC Adapter	1
23XR04000315	Left Door	1
2000767952	Schematic Wiring Diagram	1
00PSG003171300	PIC6 10 in.	1
2012538700	Controls Arrangement	1
23XR04000347	Right Door with Meter	1
2012541827	Cover, Plate	1
2012542478	Gasket	1
KA09ZZ012	Stud	4
AT39AB081	Nut, Hex	4
AU02AB081	Washer, Flat	4
AU11AS081	Fastener, Washer	4

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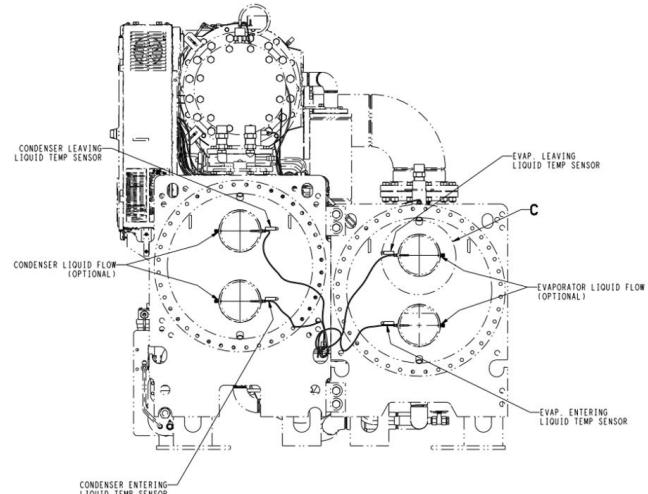
## CONTROLS REPLACEMENT

### WARNING

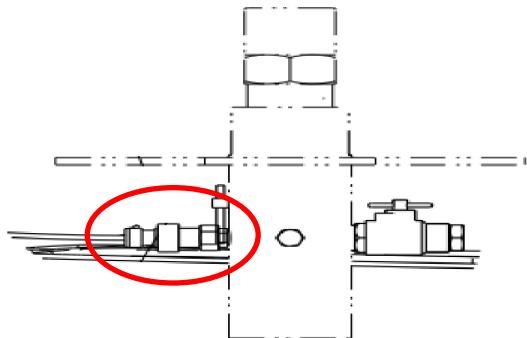
Electrical shock can cause personal injury and death. Shut off all power to this equipment during installation and service. There may be more than one disconnect switch. Tag all disconnect locations to alert others not to restore power until work is completed.

1. Confirm the 23XR chiller is secured from service with breakers for all power supplies open and electrically safe work area is established in accordance with national electrical code and relevant safety procedures.
2. Shut off all power.
3. Remove all sensors and wires from existing equipment on chiller including thermistors, solenoids, pressure sensors, actuators, heaters, pumps, etc. See Fig. 1-6.

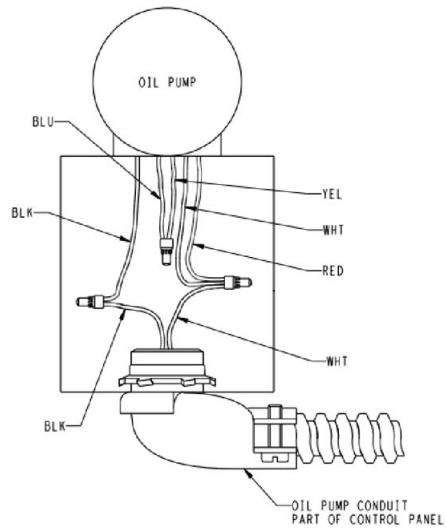
NOTE: This wiring will be replaced by the retrofit kit.



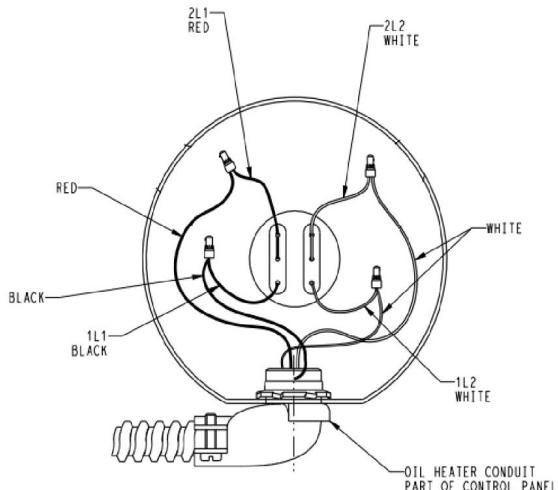
**Fig. 1 — Temperature and Flow Sensors**



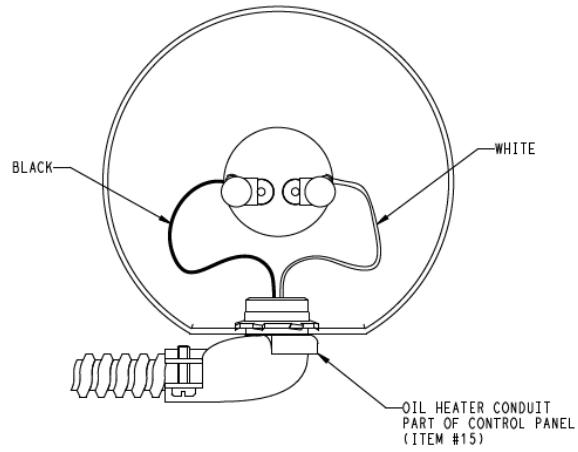
**Fig. 2 — Pressure Transducer Connector**



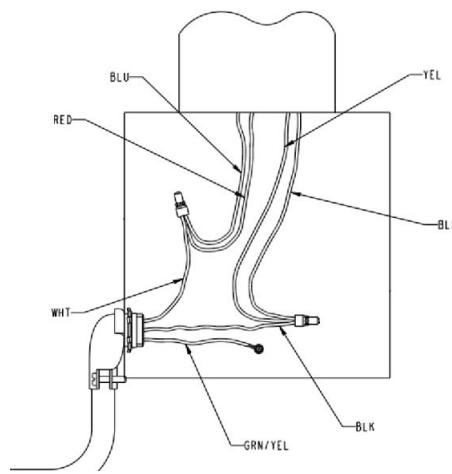
**Fig. 3 — Wiring to Oil Pump**



**Fig. 4 — Wiring to Oil Heater**



**OIL VAPORIZER WIRING**  
**Fig. 5 — Wiring to Oil Vaporizer Heater**



**Fig. 6 — Wiring to HGBP Valve**

4. Remove connectors from ICVC controller on front door (Fig. 7) and disconnect ground wire to free ICVC cable harness.



**Fig. 7 — ICVC Controller Position**

5. Disconnect connectors CN1A, CN1B, CN2, and CN3 in controls section (Fig. 8-11) to facilitate removal of entire controls backplane.



Fig. 8 – Connector Locations on Existing Panel



Fig. 9 – Connector CN2



Fig. 10 – Connector CN3



Fig. 11 – Connector CN1A

6. Remove fasteners on rear side of ICVC control panel and remove assembly from the unit. See Fig. 12.



Fig. 12 – Rear Side of Panel

7. Install new assembly and install fasteners removed in Step 5. See Fig. 13 for PIC6 control panel.

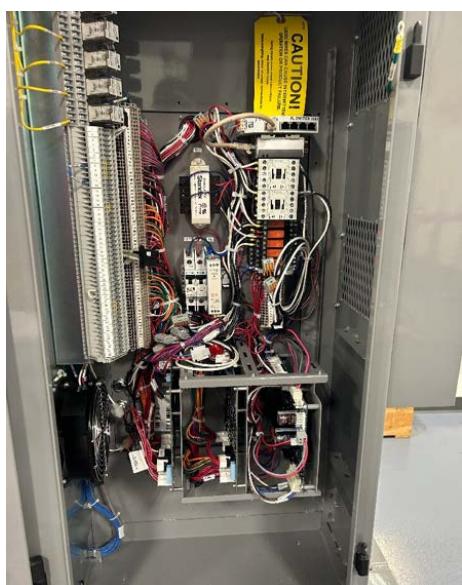
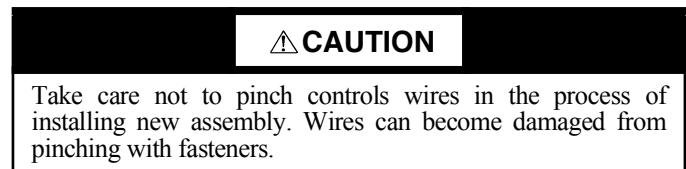
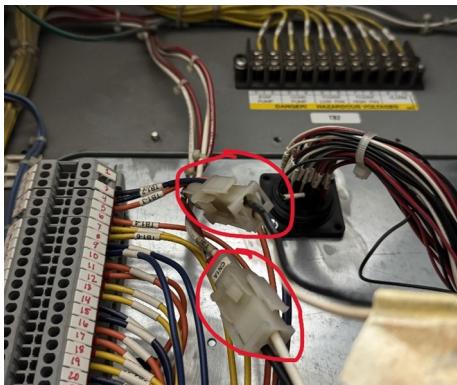


Fig. 13 – New Control Panel Layout

- Reconnect CN1A, CN1B, CN2, and CN3 with new connectors. See Fig. 14.



**Fig. 14 – Connectors CN1A (bottom) and CN1B (top)**

- Connect wire harness for new controls wiring to rear of new assembly. Route all sensors and wiring to respective locations in accordance with controls arrangement drawings (23XR04102301).

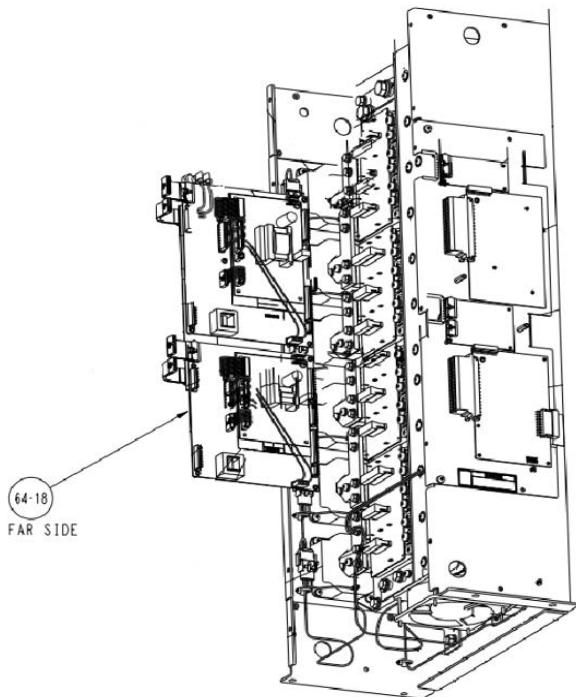
NOTE: Some setups will have additional, unused sensors in the harnesses. These can be removed via the use of a Molex pin extractor.

- Fasten cables in wire harnesses in accordance with controls arrangement drawing (23XR04102301) to obtain neat appearance.

### VFD COMMUNICATIONS UPGRADE AND DRIVE CONFIGURATION

- Open VFD section of control panel and locate VFD communications card. This may require removal of front plastic cover of VFD. Remove communications card from backplane. See Fig. 15 and 16.

NOTE: This section of procedure is only applicable for Rockwell VFDs. Contact Carrier Engineering for assistance with retrofitting drives from other manufacturers.



**Fig. 15 – VFD Communication Card Location**



**Fig. 16 – Old Communication Card**

- Install new left door (P/N 23XR04000315) in place of old door.
- Using Drive Explorer or the PowerFlex HIM, configure VFD in accordance with 20-COMM-H User Manual.
- Install CN4 connector on drive IO board and connect to CN4 connector in controls section.

### PIC6 INSTALLATION AND DOOR MODIFICATION

- Remove existing right door from unit controls section by opening and lifting door from frame.
- Remove fasteners securing ICVC to control panel and remove ICVC.
- Install new right door (P/N 23XR04000347) on the panel.
- Install PIC6 and fasten in place with provided fasteners.
- Connect ethernet, LEN, MODBUS, and 24VAC power supply to PIC6 mounted on door. See Fig. 17.



**Fig. 17 – PIC6 Connections**

- If the meter package option is not available, close the meter opening using the provided hardware.
- Install appropriate service software via service tool or USB connection.

### STARTUP AND COMMISSIONING

Perform unit start-up and commissioning via standard procedure for 23XR with PIC6 controls.