

WIRING DIAGRAM MANUAL

Geothermal Heat Pumps

HB, HP, HS, HW

Safety Labeling and Signal Words

DANGER, WARNING, CAUTION, and NOTE

The signal words **DANGER, WARNING, CAUTION, and NOTE** are used to identify levels of hazard seriousness. The signal word **DANGER** is only used on product labels to signify an immediate hazard. The signal words **WARNING, CAUTION, and NOTE** will be used on product labels and throughout this manual and other manuals that may apply to the product.

DANGER – Immediate hazards which **will** result in severe personal injury or death.

WARNING – Hazards or unsafe practices which **could** result in severe personal injury or death.

CAUTION – Hazards or unsafe practices which **may** result in minor personal injury or product or property damage.

NOTE – Used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

Signal Words in Manuals

The signal word **WARNING** is used throughout this manual in the following manner:



The signal word **CAUTION** is used throughout this manual in the following manner:



Signal Words on Product Labeling

Signal words are used in combination with colors and/or pictures on product labels.

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WARNING

DEATH, PERSONAL INJURY, AND/OR PROPERTY DAMAGE HAZARD

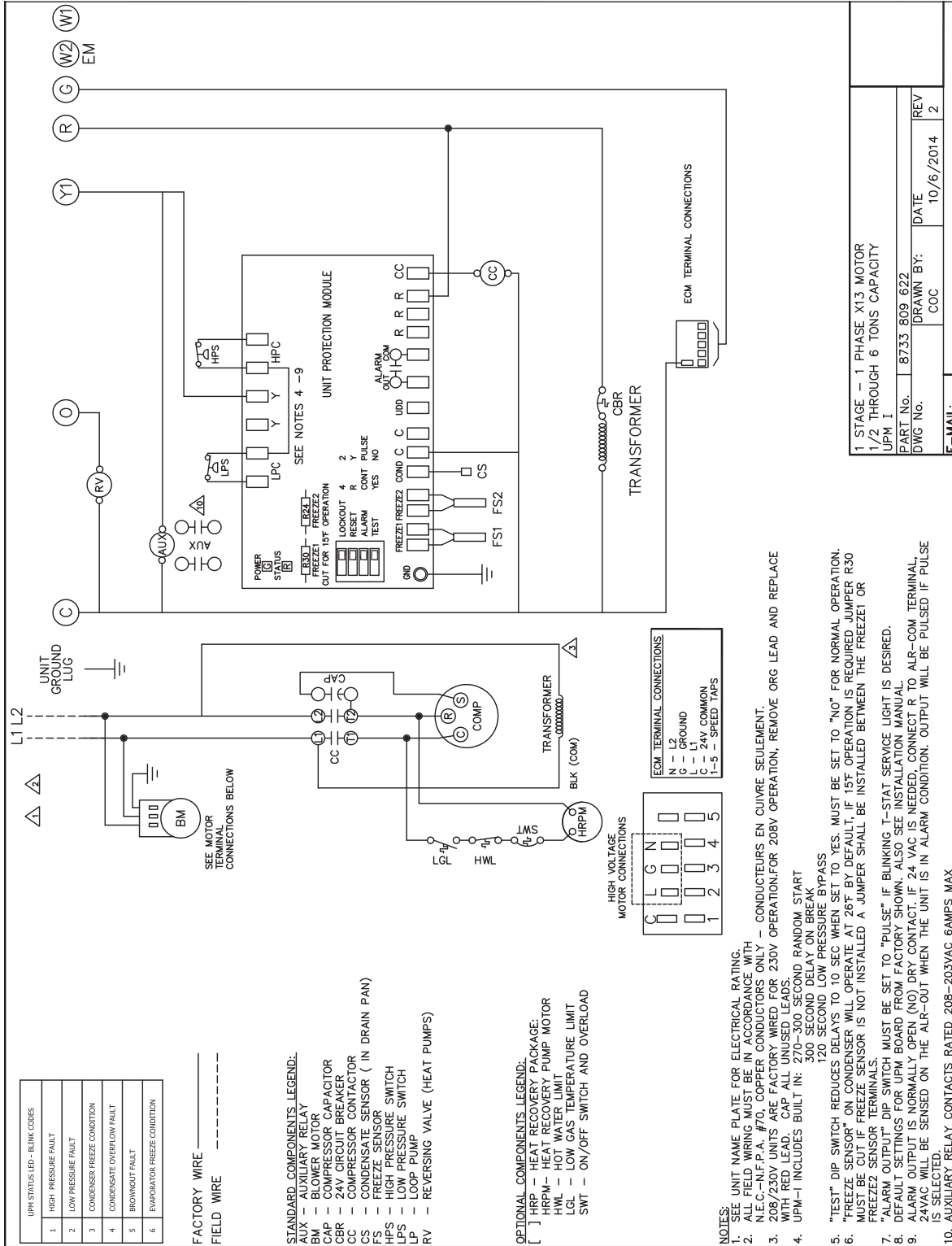
Failure to carefully read and follow this warning could result in equipment malfunction, property damage, personal injury and/or death.

Installation or repairs made by unqualified persons could result in equipment malfunction, property damage, personal injury and/or death.

The information contained in this manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.

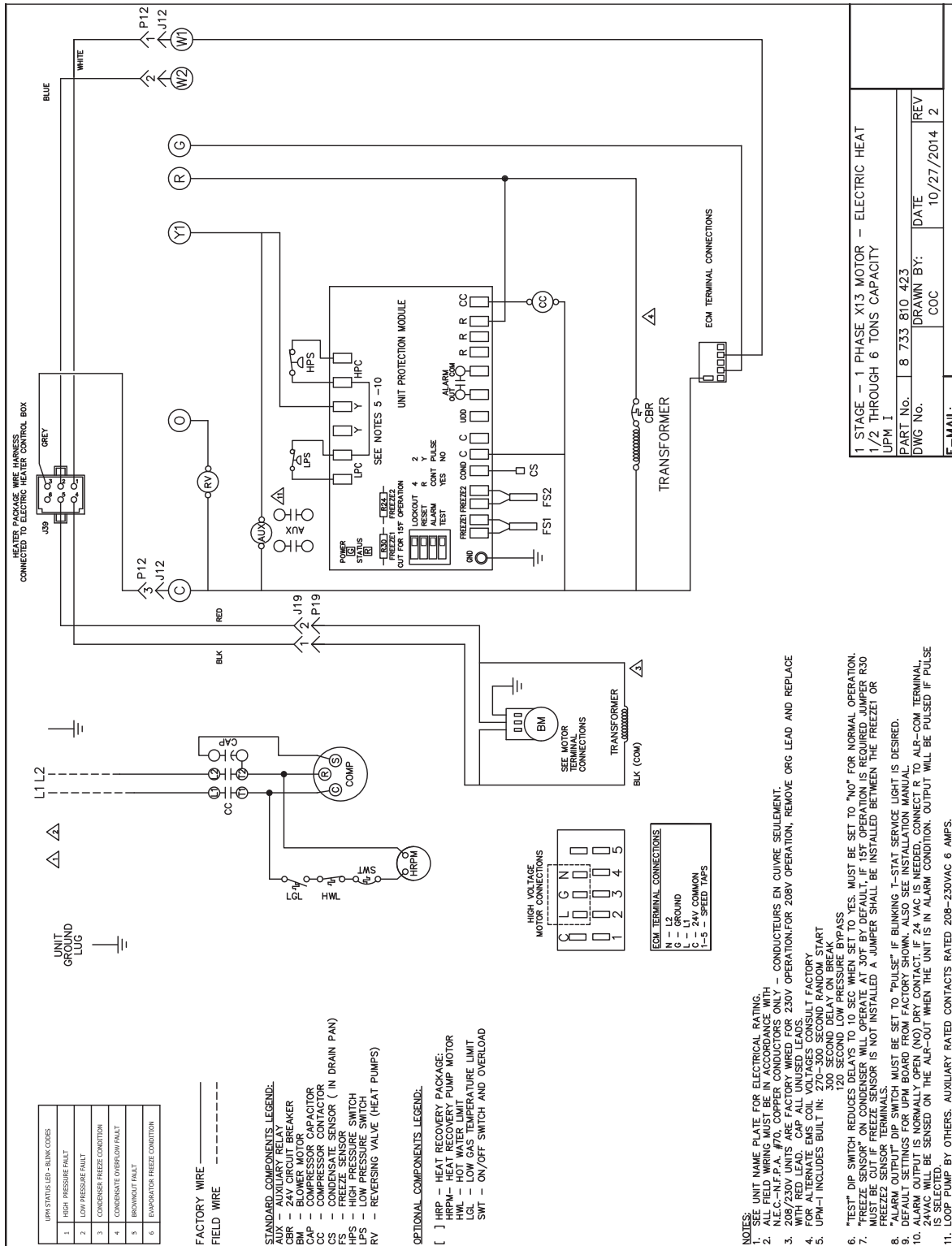
Installation must conform with local building codes and with the National Electrical Code NFPA70 current edition or Canadian Electrical Code Part 1 CSA C.22.1.

HB Series



E-MAIL:		
PART No.	8733 809 622	REV
DWG No.	COC	DATE
		10/6/2014
1 STAGE - 1 PHASE X1.3 MOTOR		
1/2 THROUGH 6 TONS CAPACITY		
UPM I		

HB Series with Auxiliary Heat

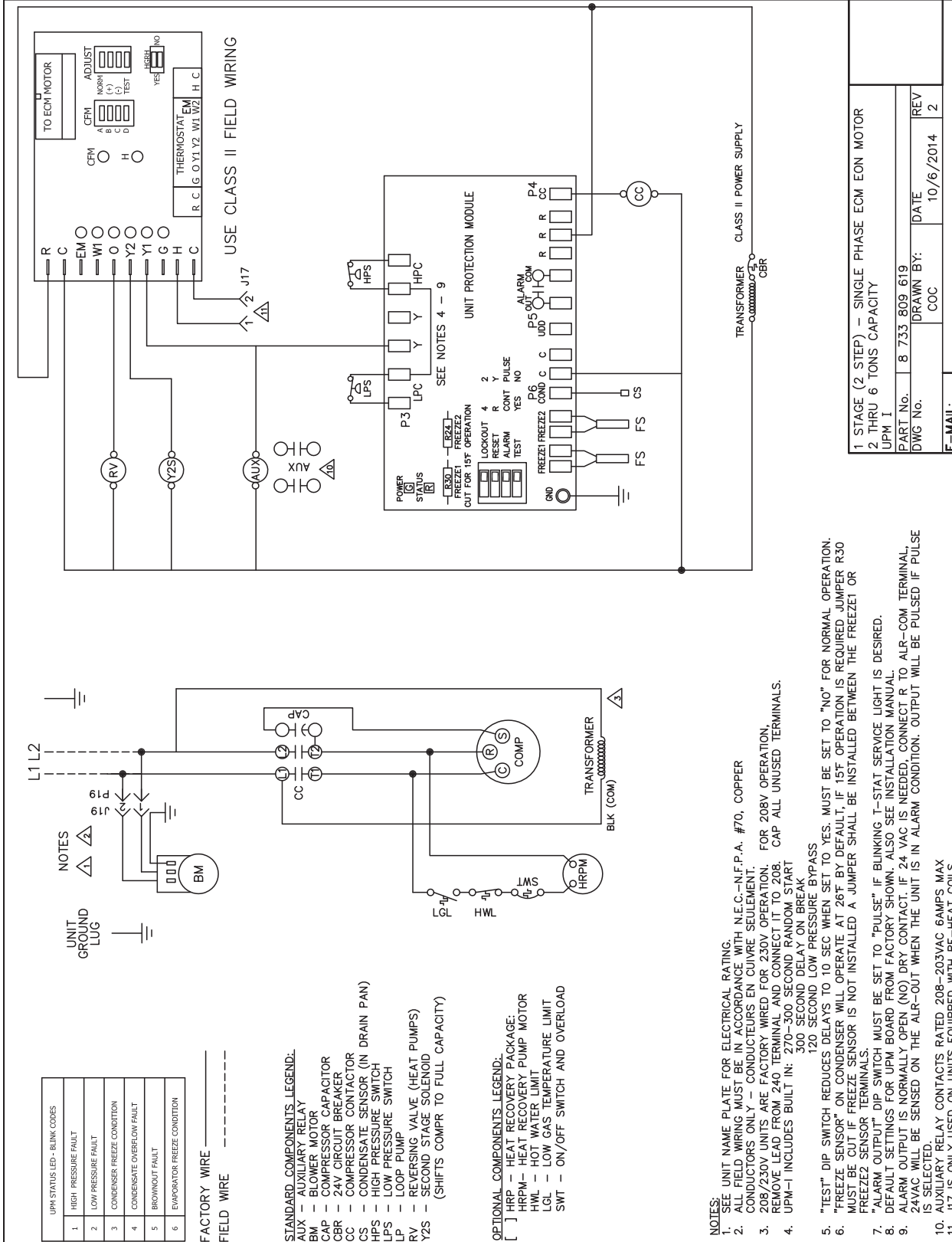


1 STAGE - 1 PHASE X13 MOTOR - ELECTRIC HEAT
 1/2 THROUGH 6 TONS CAPACITY
 UPM I

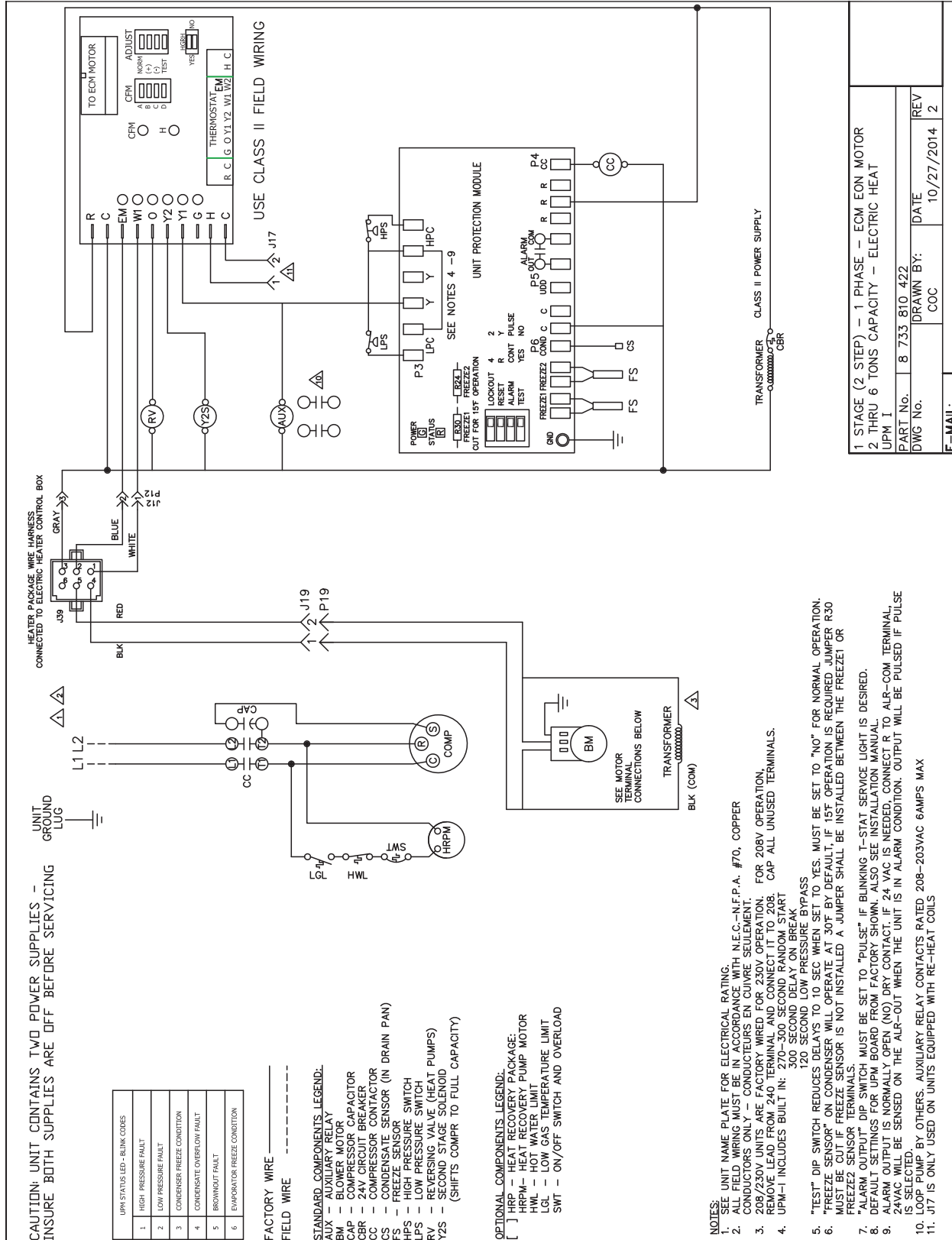
PART No.	8 733 810 423	DATE	10/27/2014
DWG No.	COC	REV	2

E-MAIL:

HP Series



HP Series with Auxiliary Heat



CAUTION: UNIT CONTAINS TWO POWER SUPPLIES - INSURE BOTH SUPPLIES ARE OFF BEFORE SERVICING

UPM STATUS LED - BLINK CODES
1 HIGH PRESSURE FAULT
2 LOW PRESSURE FAULT
3 CONDENSER FREEZE CONDITION
4 CONDENSATE OVERFLOW FAULT
5 INWINDOUT FAULT
6 EVAPORATOR FREEZE CONDITION

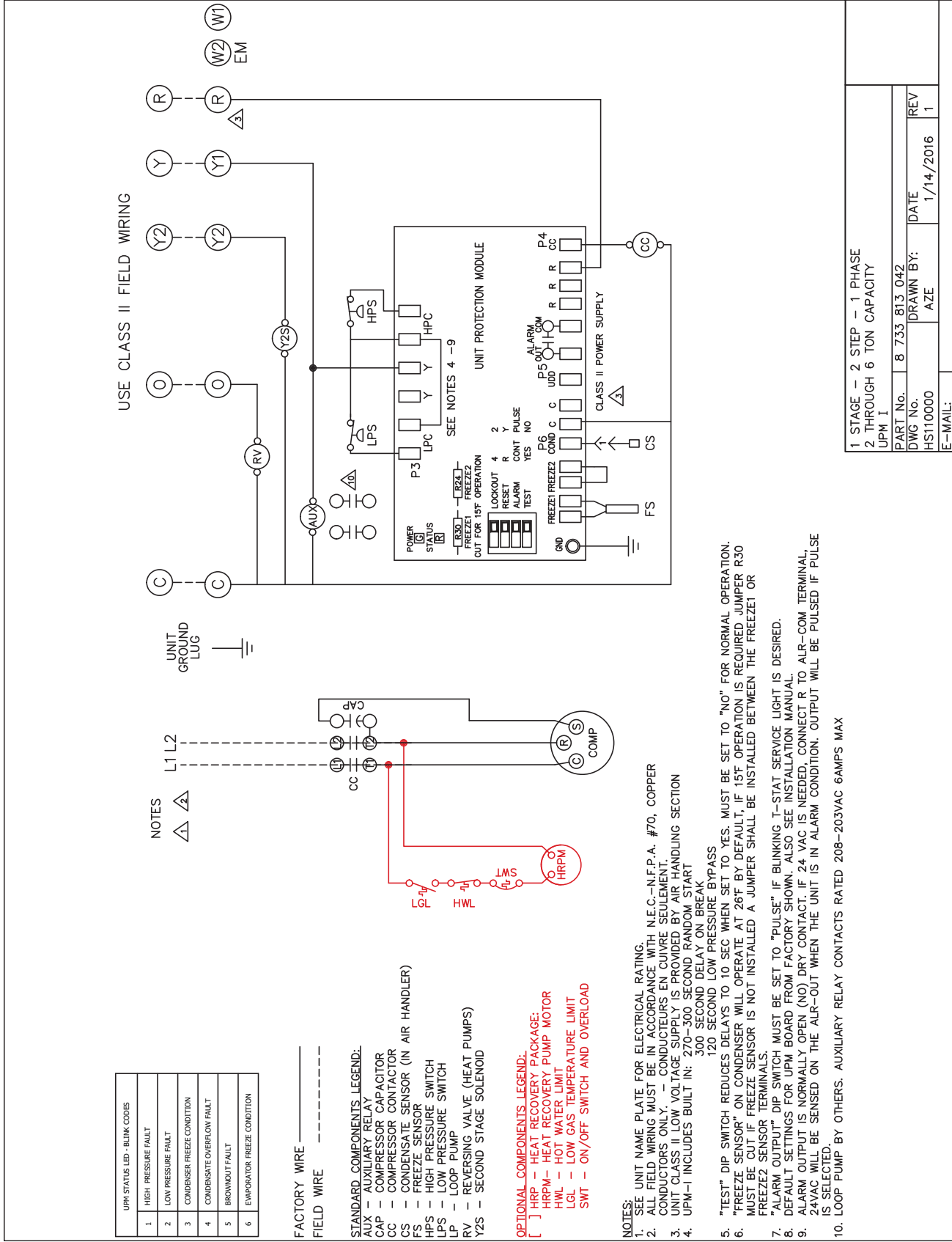
- FACTORY WIRE _____
FIELD WIRE - - - - -
- STANDARD COMPONENTS LEGEND:**
 AUX - AUXILIARY RELAY
 BM - BLOWER MOTOR
 CAP - COMPRESSOR CAPACITOR
 CBR - CONTACTOR
 CS - COMPRESSOR CONTACTOR
 CS - CONDENSATE SENSOR (IN DRAIN PAN)
 FS - FREEZE SENSOR
 HPS - HIGH PRESSURE SWITCH
 LPS - LOW PRESSURE SWITCH
 RV - REVERSING VALVE (HEAT PUMPS)
 YZS - SECOND STAGE SOLENOID (SHIFTS COMP TO FULL CAPACITY)

- OPTIONAL COMPONENTS LEGEND:**
 [] HRP - HEAT RECOVERY PACKAGE
 HRP-M - HEAT RECOVERY PUMP MOTOR
 HWL - HOT WATER LIMIT
 LWL - LOW WATER TEMPERATURE LIMIT
 SWT - ON/OFF SWITCH AND OVERLOAD

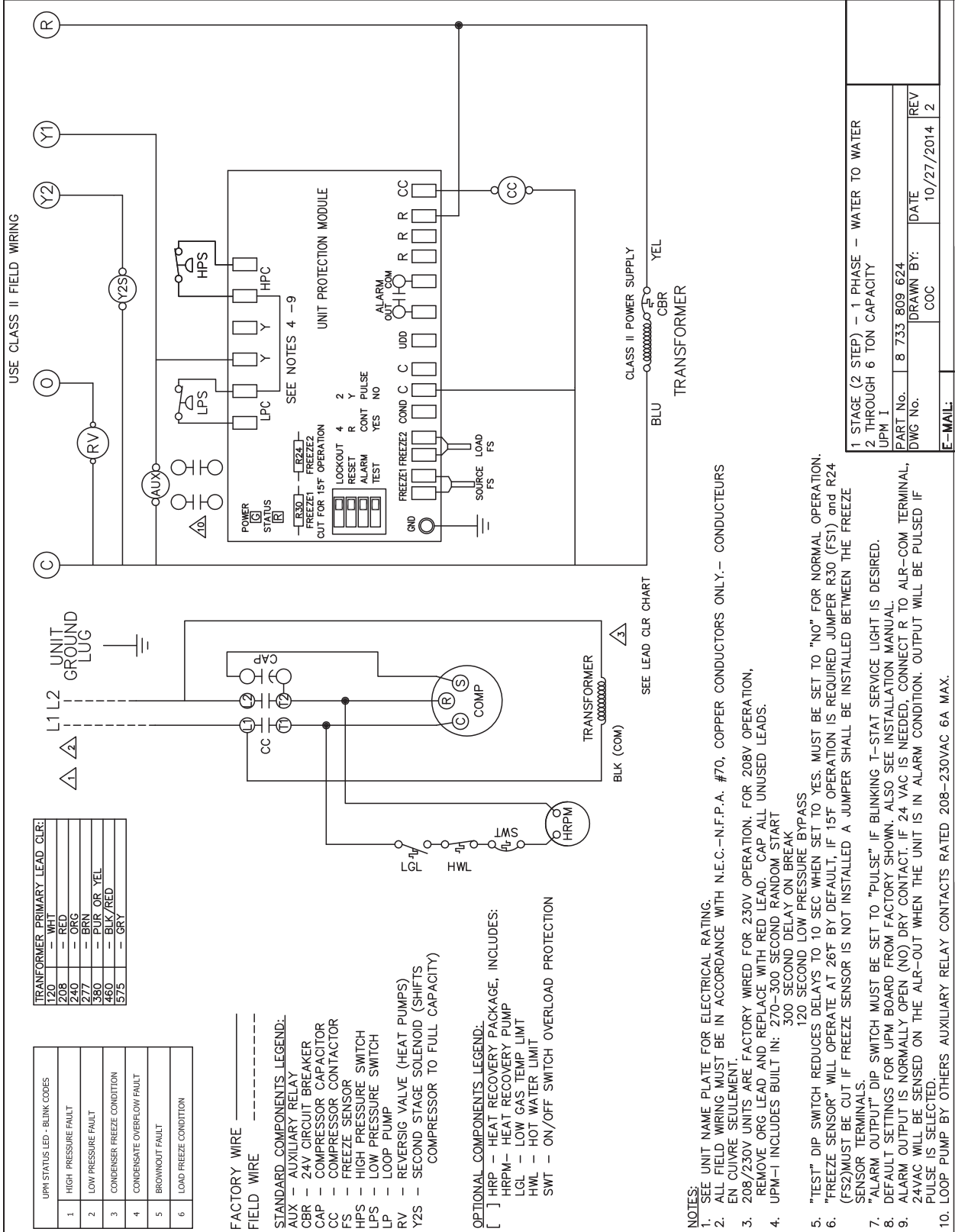
- NOTES:**
- SEE UNIT NAME PLATE FOR ELECTRICAL RATING.
 - ALL FIELD WIRING MUST BE IN ACCORDANCE WITH N.E.C.-N.F.P.A. #70, COPPER CONDUCTORS ONLY - CONDUCTEURS EN CUIVRE SÉULEMENT. FOR 208V OPERATION, REMOVE LEAD FROM 240 TERMINAL AND CONNECT IT TO 208. CAP ALL UNUSED TERMINALS.
 - UPM-1 INCLUDES BUILT IN: 270-300 SECOND RANDOM START
300 SECOND DELAY ON BREAK
120 SECOND LOW PRESSURE BYPASS
 - "TEST" DIP SWITCH REDUCES DELAYS TO 10 SEC WHEN SET TO "YES. MUST BE SET TO "NO" FOR NORMAL OPERATION.
 - "FREEZE SENSOR" ON CONDENSER WILL OPERATE AT 30°F BY DEFAULT, IF 15°F OPERATION IS REQUIRED JUMPER R30 MUST BE CUT. IF FREEZE SENSOR IS NOT INSTALLED A JUMPER SHALL BE INSTALLED BETWEEN THE FREEZE1 OR FREEZE2 TERMINALS.
 - DEFAULT SETTINGS FOR SUPPLY BOARD FROM FACTORY SHOWN. ALSO SEE INSTALLATION MANUAL.
 - ALARM OUTPUT IS NORMALLY OPEN (NO) DRY CONTACT. IF 24 VAC IS NEEDED, CONNECT R TO ALR-COM TERMINAL. 24VAC WILL BE SENSED ON THE ALR-OUT WHEN THE UNIT IS IN ALARM CONDITION. OUTPUT WILL BE PULSED IF PULSE IS SELECTED.
 - LOOP PUMP BY OTHERS. AUXILIARY RELAY CONTACTS RATED 208-203VAC 6AMPS MAX
 - J17 IS ONLY USED ON UNITS EQUIPPED WITH RE-HEAT COILS

1 STAGE (2 STEP) - 1 PHASE - ECM EON MOTOR		
2 THRU 6 TONS CAPACITY - ELECTRIC HEAT		
UPM 1	DATE	REV
DWG No. 8 733 810 422	DRAWN BY: COC	10/27/2014 2
E-MAIL:		

HS Series



HW Series / 2-Stage - 2 thru 6 Ton Capacity



- NOTES:**
1. SEE UNIT NAME PLATE FOR ELECTRICAL RATING.
 2. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH N.E.C.—N.F.P.A. #70, COPPER CONDUCTORS ONLY.— CONDUCTEURS EN CUIVRE SEULEMENT.
 3. 208/230V UNITS ARE FACTORY WIRED FOR 230V OPERATION. FOR 208V OPERATION, REMOVE ORG LEAD AND REPLACE WITH RED LEAD. CAP ALL UNUSED LEADS.
 4. UPM-1 INCLUDES BUILT IN: 270—300 SECOND RANDOM START
300 SECOND DELAY ON BREAK
120 SECOND LOW PRESSURE BYPASS
 5. "TEST" DIP SWITCH REDUCES DELAYS TO 10 SEC WHEN SET TO YES. MUST BE SET TO "NO" FOR NORMAL OPERATION.
 6. "FREEZE SENSOR" WILL OPERATE AT 26°F BY DEFAULT. IF 15°F OPERATION IS REQUIRED JUMPER R30 (FS1) AND R24 (FS2) MUST BE CUT IF FREEZE SENSOR IS NOT INSTALLED A JUMPER SHALL BE INSTALLED BETWEEN THE FREEZE SENSOR TERMINALS.
 7. "ALARM OUTPUT" DIP SWITCH MUST BE SET TO "PULSE" IF BLINKING T-STAT SERVICE LIGHT IS DESIRED.
 8. DEFAULT SETTINGS FOR UPM BOARD FROM FACTORY SHOWN. ALSO SEE INSTALLATION MANUAL.
 9. ALARM OUTPUT IS NORMALLY OPEN (NO) DRY CONTACT. IF 24 VAC IS NEEDED, CONNECT R TO ALR-COM TERMINAL, 24VAC WILL BE SENSED ON THE ALR-OUT WHEN THE UNIT IS IN ALARM CONDITION. OUTPUT WILL BE PULSED IF PULSE IS SELECTED.
 10. LOOP PUMP BY OTHERS AUXILIARY RELAY CONTACTS RATED 208—230VAC 6A MAX.

1 STAGE (2 STEP) — 1 PHASE — WATER TO WATER	
2 THROUGH 6 TON CAPACITY	
PART No.	8 733 809 624
DWG No.	COC
DATE	10/27/2014
REV	2
E-MAIL:	