



---

## Power Pack Service Manual

MMPP4301-EP

MMPP4301

MMPP4301-WC

MMPP4301-PKG

MMPP4301-PKG-WC

MMPP4302

MMPP4302-WC

MMPP4302-PKG

MMPP4302-PKG-WC

MMPP4303-PKG

MMPP4303-PKG-WC

MMPP4303-PKG-3

MMPP4305-PKG

MMPP4305-PKG-WC

MMPP4305-PKG-3





## TABLE OF CONTENTS

Equipment Specifications .....	2
Installation and Operation .....	3
75' Unit .....	3
125', 250', 350' and 500' Units .....	4
Maintenance .....	4
Electronic Temperature Control with Display .....	5
Changing a Glycol Pump .....	6
Replacing Motor .....	7
Replacing Thermostat .....	7
Troubleshooting .....	8
Typical Spare Parts .....	9
Wiring Diagrams .....	10
Warranty .....	15



## EQUIPMENT SPECIFICATIONS

Air Cooled	MMPP4301-EP	MMPP4301-WC	MMPP4301-PKG	MMPP4302	MMPP4302-PKG-WC	MMPP4303-PKG	MMPP4303-PKG-WC	MMPP4305-PKG	MMPP4305-PKG-WC
<b>Water Cooled</b>									
<b>Cooling Distance</b>	<b>75'</b>	<b>125'</b>	<b>125'</b>	<b>250'</b>	<b>250'</b>	<b>350'</b>	<b>350'</b>	<b>500'</b>	<b>500'</b>
<b>Glycol Pumps</b>	1	1	2	1	2	2	3	2	3
<b>Pump Type</b>	Vertical	Gear	Gear	Gear	Gear	Gear	Gear	Gear	Gear
<b>Pump GPH</b>	240	80	80	80	80	80	80	80	80
<b>Motor HP</b>	1/3	1/3	1/3	1/2	1/2	3/4	3/4	1	1
<b>Voltage</b>	115	115	115	115	115	220	220	220	220
<b>Plug Type</b>	5-15P	5-15P	5-20P	5-20P	L5-30P	6-15P	6-20P	6-15P	6-20P
<b>Amps (Running)</b>	7.0	11.5 11.5	17.5	15.3 15.5	21.1	10.6	10.6	11.0	14
<b>Refrigerant</b>	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
<b>Charge (oz.)</b>	10	12	12	16	16	16	16	48	48
<b>Refrigeration Pressure</b>	185 (low) 235 (high)	185 (low) 235 (high)	185 (low) 235 (high)	185 (low) 235 (high)	185 (low) 235 (high)	185 (low) 235 (high)	185 (low) 235 (high)	185 (low) 235 (high)	185 (low) 235 (high)
<b>BTUs/H</b>	2,300	2,600	2,600	3,400	3,400	5,000	5,000	7,000	7,000
<b>Dimensions H x W x D Including pump(s) and motor(s)</b>	19" x 17" x 26"	28" x 18" x 26"	28" x 18" x 26"	37" x 18" x 40"	37" x 18" x 40"	37" x 18" x 40"	37" x 25" x 40"	37" x 18" x 40"	38" x 25" x 40"
<b>Weight (lbs)</b>	90	110	130	130	170	170	170	190	205
<b>Bath Capacity (gal)</b>	5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
<b>Bath Insulation Thickness</b>	1.5"	1.5"	1.5"	1.5"	1.5"	1.5"	1.5"	1.5"	1.5"
<b>Approval</b>	ETL Listed	ETL Listed	ETL Listed	ETL Listed	ETL Listed	ETL Listed	ETL Listed	ETL Listed	ETL Listed

Micro Matic reserves the right to change specifications without notice.



## INSTALLATION AND OPERATION

1. Remove packaging from the unit in the vicinity of the area where it will be installed.
2. Carefully lift the unit into the desired position.

**NOTE: DO NOT PUSH OR SLIDE UNIT – Damage will be caused to the legs if the unit is pushed into position.**

### PLACEMENT

- It is not recommended to install a power pack on top of a walk in cooler.
- It is not recommended to install a power pack outside.
- Always ensure a minimum clearance of 18 inches above and in front of a power pack. This allows for proper air flow around unit.
- Ambient operating temperature range is 50-90° F for all air cooled models.
- Power pack must be wired to a ground fault circuit interrupter per UL guidelines.

### 75' UNIT INSTALLATION STEPS

(Assure tower connections are complete.)

1. Connect one of the glycol tubes to the pump inlet. Insulate any exposed tubing.
2. Connect the second glycol line to the pump outlet. Insulate any exposed tubing.
3. Carefully push the glycol bath lid to one side, allowing sufficient space to fill the bath with liquid.
4. Inspect the bath for debris.
5. Fill the glycol bath with **Micro Matic Polar Flo** glycol solution (**mixed 2 ½ parts water to 1 part glycol**) Fill the bath to the full level on the glycol level indicator.
6. Connect unit to the electrical outlets capable of handling the required voltage loads. This should be carried out by suitably trained personnel and comply with all state and national electrical codes.
7. Glycol level will fall as glycol is pumped through the glycol lines. Continue to fill the bath to the fill level on the glycol level indicator.
8. Replace top cover.
9. Inspect for any leaks.
10. Glycol temperature will fall slowly to 29°F.

**NOTE: To adjust the glycol temperature, please see Adjusting Electronic Thermostat.**



## 125', 250', 350' AND 500' UNITS INSTALLATION STEPS

(Assure tower connections are complete.)

1. Remove the refrigeration deck from the unit.
2. Inspect the glycol tank for any debris.
3. Connect one of the glycol lines from the trunk line to the pump outlet. Insulate any exposed tubing.  
**NOTE: In units with more than one pump, connect a glycol line to each pump outlet.**
4. Connect the second glycol line from each circuit to the glycol bath inlet.
5. Fill the glycol bath with **Micro Matic Polar Flo** glycol solution:
  - **125', 250' and 350' units: 2 ½ parts water to 1 part glycol.**
  - **500' unit: 1 part distilled water to 1 part glycol.**Fill bath to the level of the fill line on the glycol level indicator.
6. Replace the refrigeration deck.
7. Remove electrical outlets capable of handling the required voltage loads. This should be carried out by suitably trained personnel and must comply with all state and national codes.
8. Glycol level will fall as glycol is pumped through the glycol lines. Continue to fill the bath to the full level on the glycol level indicator.
9. Inspect for any leaks.
10. Temperature of the glycol will fall slowly to 29°F.

**NOTE: To adjust the glycol temperature, please see Adjusting Electronic Thermostat.**

## MAINTENANCE

1. Inspect the unit monthly to ensure that the glycol level is maintained to the full level.
2. If the level is low replace with a **Micro Matic Polar Flo** glycol solution:
  - **75', 125', 250' and 350' units: mixed 2 ½ parts water to 1 part glycol.**
  - **500' units: 1 part distilled water to 1 part glycol.**
3. If there is evidence of ice build up in the unit, allow the ice to melt and replace all the water/glycol solution with a fresh solution mixed per above instructions.
4. The glycol/water solution should be changed approximately every 18 months. In regions of high humidity considerations should be given to replacing the solution on an annual basis.
5. Check and clean the condenser fins every sixty (60) days.
6. Check that there is adequate air flow through the unit ensuring enough space all around and that there are no obstructions in front of the air flow vents.
7. Check the condition and effectiveness of the trunk line insulation.
8. At regular intervals, to be determined by the owner, the unit should be checked for electrical safety.



## ELECTRONIC TEMPERATURE CONTROL WITH DISPLAY

**NOTE:** When the unit leaves the factory the electronic thermostat is pre-set to the following parameters:

Temperature Scale:	F (Fahrenheit)
Setpoint:	29° F
Differential:	3° F



**NOTE:** To ensure the correct operation of your unit these parameters must be adhered to.

## ADJUSTING ELECTRONIC THERMOSTAT

### HOW TO SEE THE SETPOINT

1. Push and immediately release the SET key: the display will show the set point value.
2. Push and immediately release the SET key or wait for five (5) seconds to display the probe value again.

### HOW TO CHANGE THE SETPOINT

1. Push the SET key for more than two (2) seconds to change the set point value.
2. The value of the set point will be displayed and the \* LED starts blinking.
3. To change the Set value push the  (up) or  (down) arrows.
4. **To lock the new set point value push the SET key again and wait 15 seconds.**



## CHANGING A GLYCOL PUMP 75' UNIT

1. Unplug unit from receptacle.
2. Remove four (4) screws holding pump to bath lid.
3. Cut tubing slightly above outlet fitting on pump.
4. Remove pump through hole in top of bath lid.
5. Insert new pump through opening in lid.
6. Attach pump outlet hose and clamp with stainless steel clamp.
7. Replace mounting screws and plug unit into receptacle.

## 125', 250', 350' AND 500' UNITS

**Note: A pinch off tool is required to complete this repair**

1. Unplug unit from receptacle.
2. Pinch off glycol supply line to bottom of pump allowing enough room to remove clamp safely.
3. Hold pump firmly and loosen clamp between pump and motor.
4. With clamp loose remove pump and drive key.
5. Install new key and pump by reattaching clamp making sure alignment of key is correct between pump and motor.
6. Reattach glycol supply hose and install clamp.
7. Remove pinch off tool and plug unit into receptacle.



## REPLACING MOTOR 125', 250', 350' AND 500' UNITS

**Note: Replacement motor is not supplied with electrical cord. Remove and reuse cord from defective motor.**

1. Unplug unit from receptacle.
2. Support pump and loosen clamp holding pump to motor. As clamp is loosed pump will eventually disconnect from motor. Make sure pump does not damage glycol supply line as it becomes free from motor.
3. With pump free from motor remove drive key and replace.
4. While supporting motor remove four (4) nuts and hardware from mounting studs.
5. Mount new motor by aligning mounting bracket with mounting studs and reattaching mounting nuts and hardware. **Note: new motor is supplied with mounting bracket.**
6. Reattach pump to motor with clamp making sure new drive key aligns with motor shaft.
7. Locate defective motor and remove electrical connection cover plate (follow cord to where it enters back of motor) exposing cord connections. Remove ground connection by unscrewing green screw and removing ground wire. Unplug remaining 2 wires by pulling firmly on connections. Reattach cord to new motor by affixing ground wire to green ground screw and plugging 2 wires to motor connections. Place cord in electrical wire channel in motor housing and reattach electrical connection cover plate.
8. Plug cord into receptacle.

## REPLACING THERMOSTAT ALL UNITS

1. Unplug unit from receptacle.
2. Remove the screws holding the thermostat housing to the unit. Slide the white plastic brackets backwards off of the thermostat. Remove thermostat from housing.
3. Making note of which wire is connected to which number on the thermostat, remove wires using small slotted screwdriver. Reattach wires to correct numbers on new thermostat and reassemble into housing. NOTE: All XR02 thermostats are supplied with a four wire connector. If the unit has an old XR20 thermostat, connect the 120v supply wires that were on terminals 7 and 8 to the harness wires coming from terminals 6 and 7 on the new XR02. The wires that were connected to terminals 4 and 5 on the old thermostat should connect to the harness wires coming from terminals 8 and 9.
4. Reattach thermostat housing to unit and plug unit into receptacle.
5. For thermostat setting instructions see page 5.





## TROUBLESHOOTING

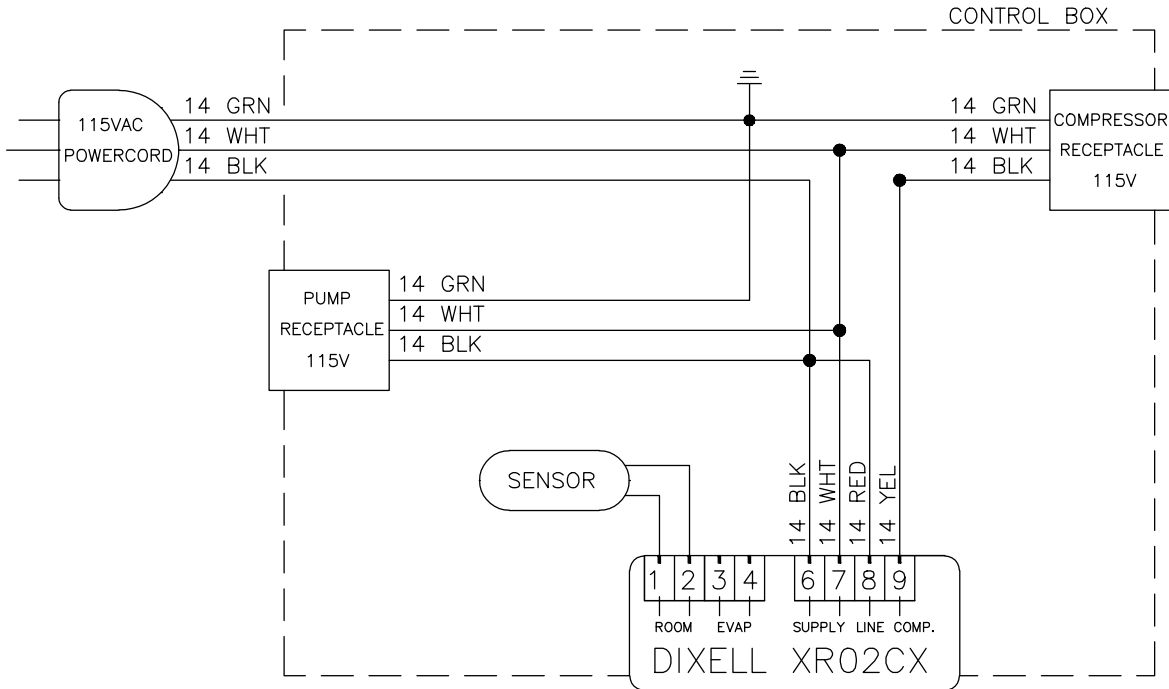
Trouble		Cause		Solution	
1.	Excessive foam	A.	Warm walk-in cooler	A.	Adjust cooler temperature to 36° to 38° F (use a quality thermometer)
		B.	Check applied pressure to keg	B.	Adjust setting on regulator for proper flow rate of two (2) ounces per second.
		C.	Check equipment	C.	Check the physical equipment from keg to faucet
		D.	Warm product lines	D.	Refer to #5
2.	Compressor does not start (no hum), but the fan motor runs.	A.	Compressor relay or capacitor malfunction	A.	Replace compressor relay or capacitor
		B.	Inadequate voltage	B.	Measure voltage across common and run terminal on compressor. Voltage must not drop below 90% of rated voltage.
		C.	Compressor failure	C.	Replace compressor
3.	Compressor starts and continues to run until freeze up and will not cut off.	A.	Thermostat control failure	A.	Replace thermostat
		B.	Freon leak	B.	Repair leak and recharge
4.	Compressor does not run but hums.	A.	Inadequate voltage	A.	Measure voltage across common and run terminal on compressor. Voltage must not drop below 90% of rated voltage.
		B.	Starting relay malfunction	B.	Replace starting relay. Be sure to use correct relay. Failure to use correct relay will cause compressor failure.
		C.	Compressor malfunction	C.	Replace compressor
5.	Warm beer	A.	Defective Pump (check motor also)	A.	Check return line in reservoir for liquid flow. Replace pump on 125', 250', and 500' units. Check condition of key between pump and motor.
		B.	Defective motor (check pump also)	B.	Replace motor
		C.	Refrigeration unit not running	C.	Refer to #2
		D.	Trunk lines located in overheated area	D.	Remove from any hot water pipes or kitchen area with stove or glass washer.
		E.	Trunk lines flooded in PVC chase.	E.	Remove lines from PVC, thoroughly dry PVC and repair or replace trunk line as needed.
		F.	Uninsulated or poorly insulated lines	F.	All lines should be fully insulated from cooler into dispenser. Includes glycol lines from power pack into cooler.
		G.	Thermostat	G.	Adjust temperature to colder setting.
		H.	Condenser fan motor not working	H.	Replace condenser fan motor
		I.	Freon Leak	I.	Repair leak and recharge
		J.	Dirty condenser	J.	Clean the condenser
		K.	Condensation inside trunk line insulation (may be caused from cleaning lines)	K.	Check trunk housing in areas for drooping or low spots, split insulation approximately 5" and separate. Allow any water to drain, then air dry the seal closed.



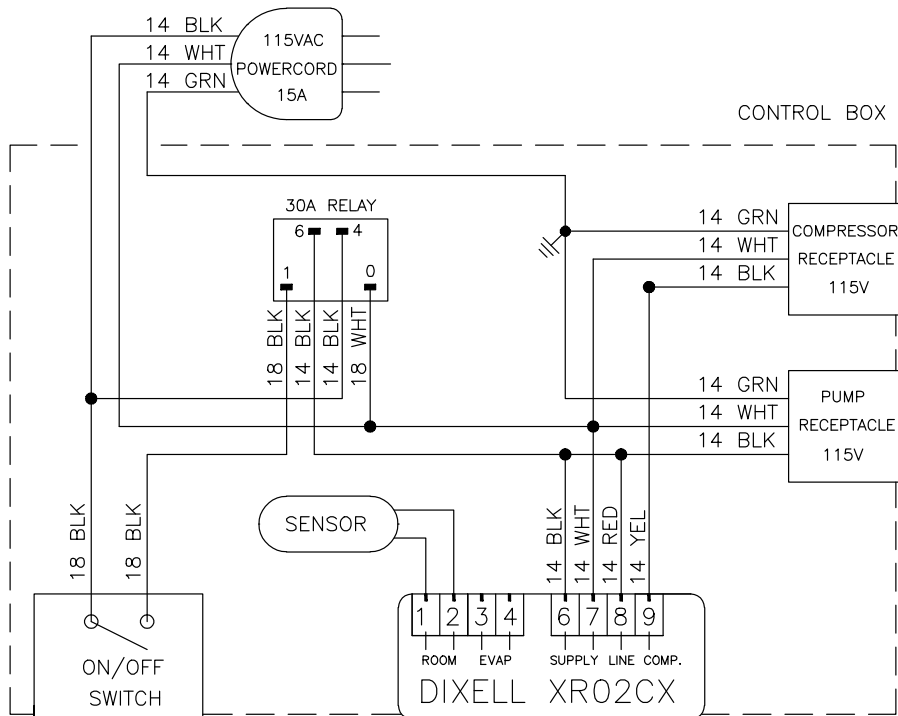
## TYPICAL SPARE PARTS

Component	Part Number	75'	125'	250'	350'	500'
Gear Pump and Motor Assy	MMPP4301-PM		X	X		
Gear Pump and Motor Assy	PP4305-PM				X	X
Gear Pump Assy	PP4301-PA		X	X	X	X
Motor (1/3 HP)	MMPP4301-M		X	X		
Motor (1/3 HP)	MMPP4305-M				X	X
Gear Pump Key	PP4301-KEY		X	X	X	X
Clamp	PP4301-CLAMP		X	X	X	X
Nipple for Gear Pump-Straight	617C	X	X	X	X	
Nipple for Gear Pump-90 Degree	617C-90	X	X	X	X	
Vertical Pump	MMPP4301-EPVP	X				
Thermostat XR02CX4N4FQ	MMPPDT100	X	X	X		
Thermostat XR02CX5N4FQ	MMPPDT500				X	X
75' & 125' Compressor	MMPP4301-EP-C	X	X			
125' Refrigeration Deck	MMPP4301-UPPER		X			
250' Refrigeration Deck	MMPP4302-UPPER			X		
250' Compressor	MMPP4302-C			X		
350' Compressor	MMPP4303-C				X	
500' Compressor	MMPP4305-C					X
On/Off Power Switch	MMPP4301-SW-P		X	X	X	X

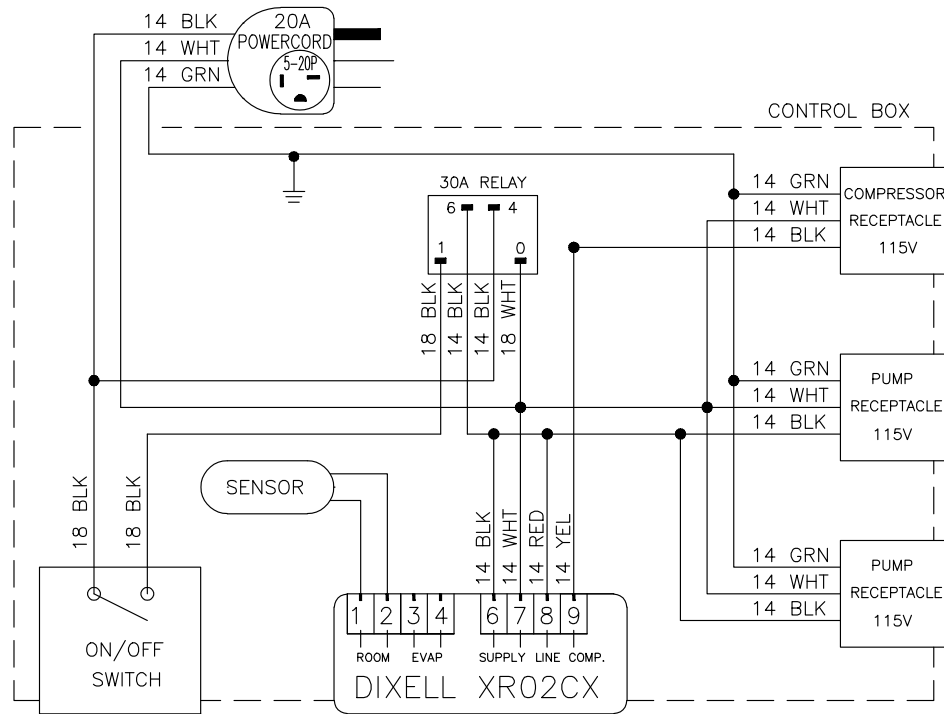
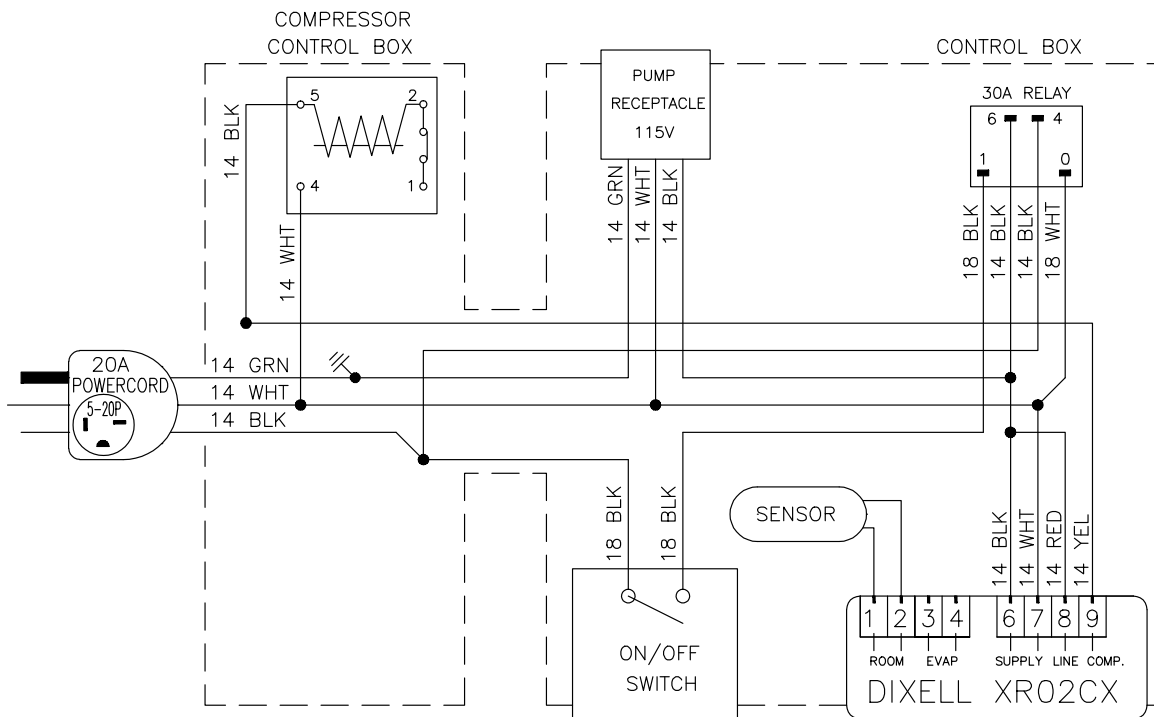
## WIRING DIAGRAMS



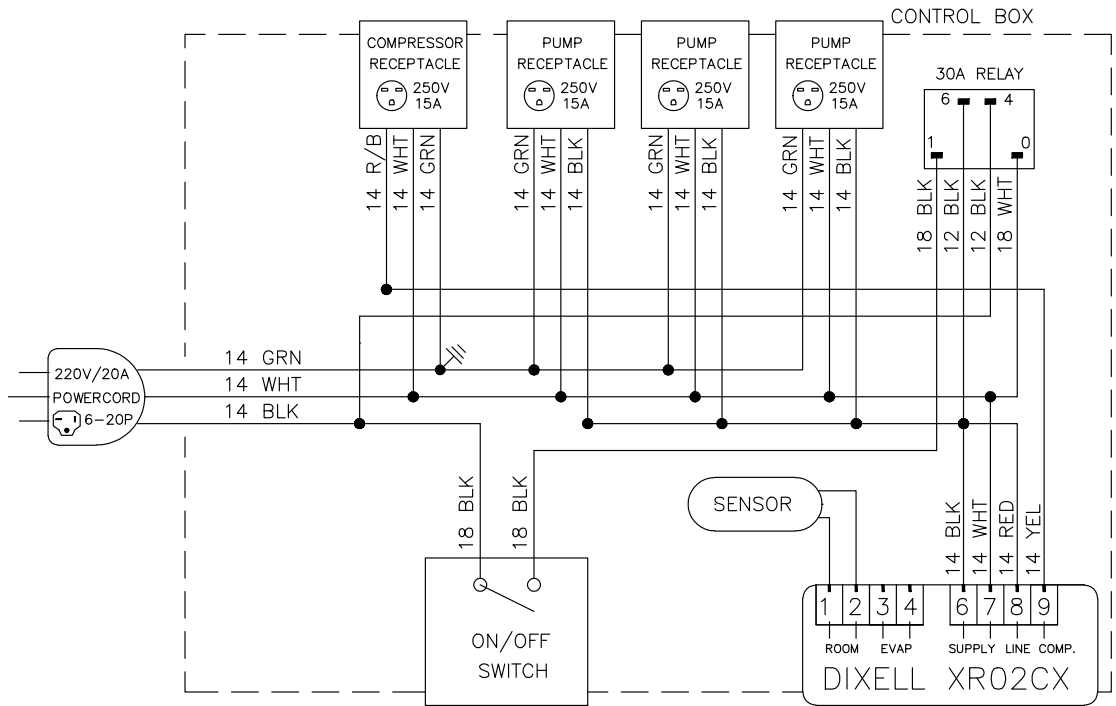
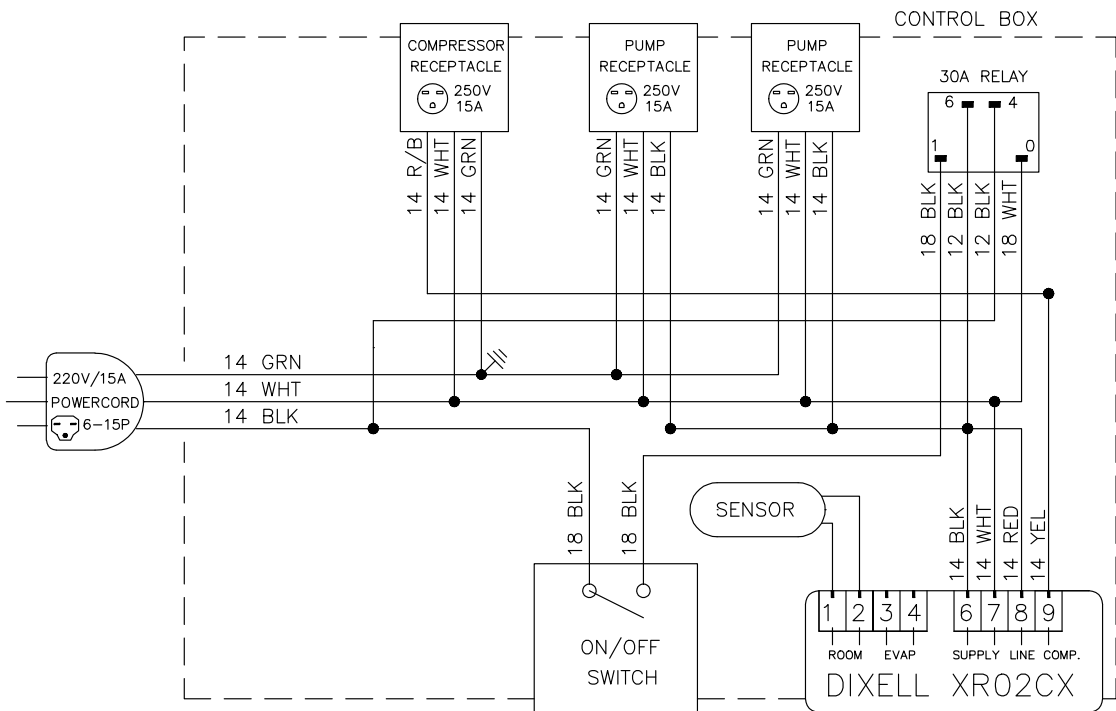
**MMPP4301-EP**

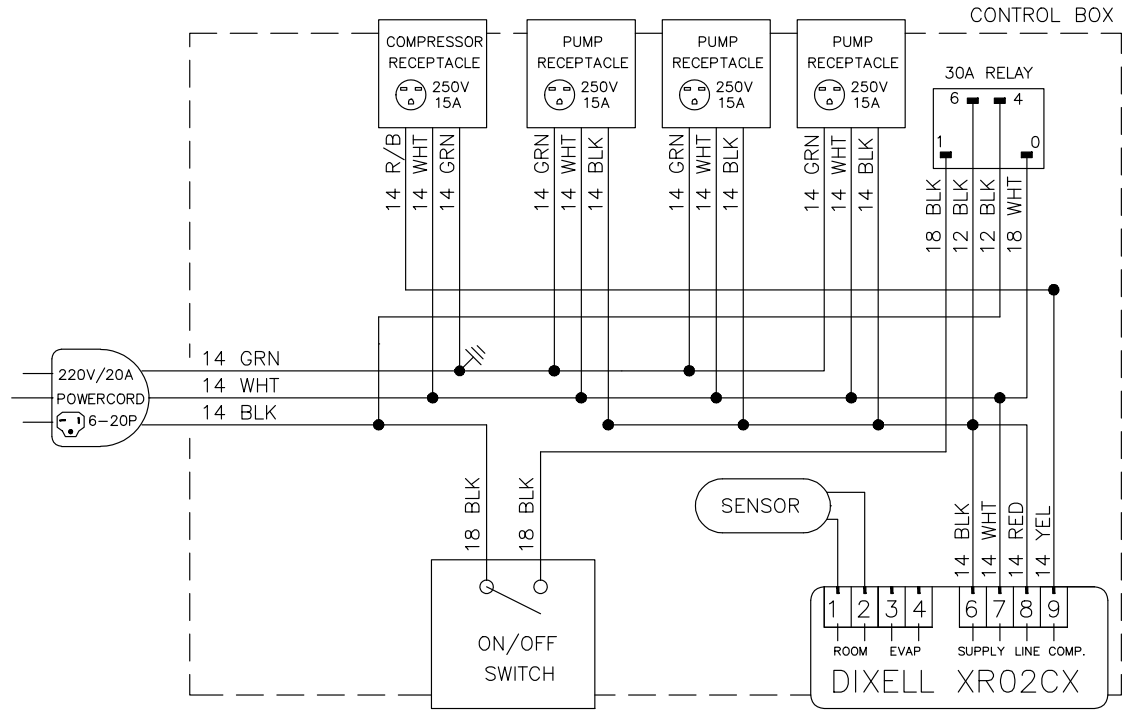


**MMPP4301**


**MMPP4301-PKG**

**MMPP4302**




**MMPP4303-PKG-3**

**MMPP4305-PKG**



MMPP4305-PKG-3



## WARRANTY

All power packs carry a full warranty against defects in material and workmanship for a period of eighteen (18) months from date of sale. Defective parts, subject to Micro Matic inspection, will be replaced or repaired for ninety (90) days on a no charge basis. The compressor has a standard five (5) year warranty. All loss of sales must be borne by the purchaser.

### **Warranty Claims Procedure:**

Purchaser shall notify Micro Matic of any defect discovered in the Product during the Warranty Period, and obtain a return authorization number. Purchaser must ship the Product per Micro Matic's instruction. After receipt of the Product, Micro Matic shall, at its option, repair (or authorize the repair of), or replace or refund the purchase price for the Products found by Micro Matic to be defective. Micro Matic's determination of defects is final. Failure by Purchaser to give notice of claims of breach of warranty within the Warranty Period shall be deemed an absolute and unconditional waiver of Purchaser's claim for such defects. Products repaired or replaced during the Warranty Period shall be covered by the foregoing warranties for the remainder of the original Warranty Period or ninety (90) days from the date of delivery of the repaired or replaced Products, whichever is longer.

**ALL REPAIRS MUST BE FIRST AUTHORIZED BY MICRO MATIC PER THE ABOVE PROCEDURE. UNAUTHORIZED REPAIRS WILL NOT BE REIMBURSED BY MICRO MATIC UNDER ANY CIRCUMSTANCES.**

Micro Matic is not responsible for parts damaged from factors including, but not limited to any part that has been subject to misuse, neglect, alteration, accident, unauthorized service, abuse, or to any damage caused by transportation. This warranty does not cover items subject to normal wear and tear (gaskets, seals, o-rings, etc.).

### **Purchaser Responsibility:**

Except as expressly provided in this Agreement, Purchaser assumes all other responsibility for any loss, damage, or injury to persons or property arising out of, connected with, or resulting from the use of Products, either alone or in combination with other products or components. In no event will Micro Matic be responsible for incidental, consequential or punitive damages of any kind, including without limitation, claims for loss of beer, loss of gas or loss of sales.

### **Other Warranties Disclaimed:**

These are the sole and exclusive warranties and conditions given by Micro Matic with respect to the products and services and are in lieu of and exclude all other warranties or conditions, express or implied, arising by operation of law or otherwise, including without limitation, warranties of merchantability, fitness for a particular purpose and non-infringement, whether or not the purpose or use has been disclosed to Micro Matic in specifications, drawings or otherwise, and whether or not Micro Matic's products are specifically designed and/or manufactured by Micro Matic for purchaser's use or purpose.

### **Limitation of Remedy:**

Purchaser's sole and exclusive remedy for breach of any warranty or condition under this Article IV shall be limited to the repair, correction or replacement, or refund of the purchase price paid in respect of the defective Products, unless the claim falls under the provisions of Section 6.2, in which case Purchaser may also claim damages in accordance with the terms of Section 6.2.