PRODUCT DRAWING YORK INTERNATIONAL CORPORATION P.O. Box 1592, York, PA 17405	Supersedes: Nothing Form 160.49-PW8 (297) **WIRING DIAGRAM, MILLENNIUM MODEL YK LIQUID CHILLERS MICROCOMPUTER CONTROL CENTER WITH SOLID STATE STARTER**
CONTRACTOR _____ ORDER NO. _____ YORK CONTRACT NO. _____ YORK ORDER NO. _____	PURCHASER _____ JOB NAME _____ LOCATION _____ ENGINEER _____
☐ REFERENCE DATE _____	☐ APPROVAL DATE _____ ☐ CONSTRUCTION DATE _____

For use with York Centrifugal Liquid Chilling Units shown below:

Models YK (Style C)

JOB DATA:

CHILLER MODEL NO. YK _____

NO. OF UNITS _____

COMPRESSOR MOTOR _____ VOLTS, 3-PHASE, _____ Hz

OIL PUMP MOTOR _____ VOLTS, 3-PHASE, _____ Hz, _____FLA

REMARKS:

_____

_____

_____

_____

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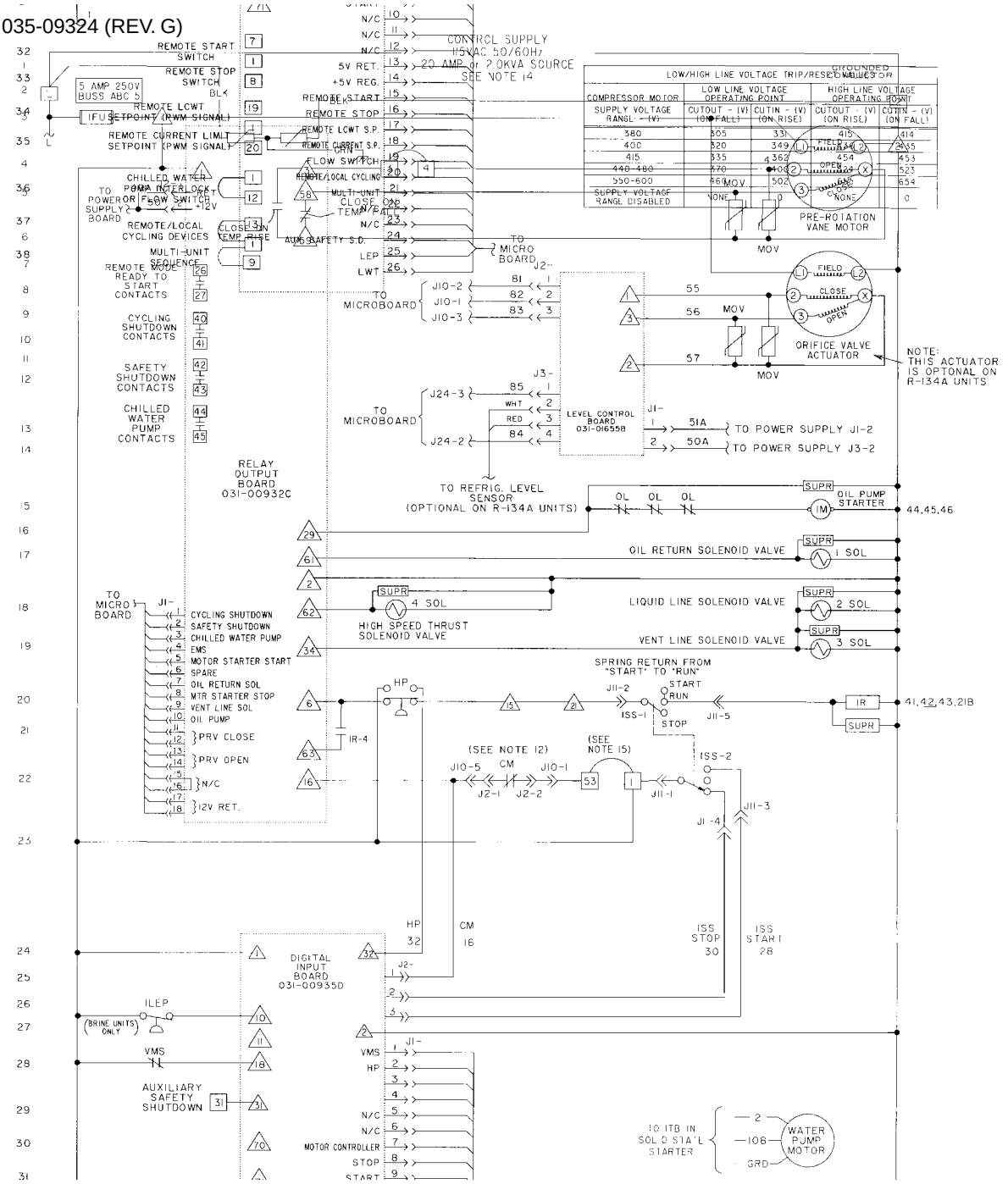
_____

ELEMENTARY DIAGRAM

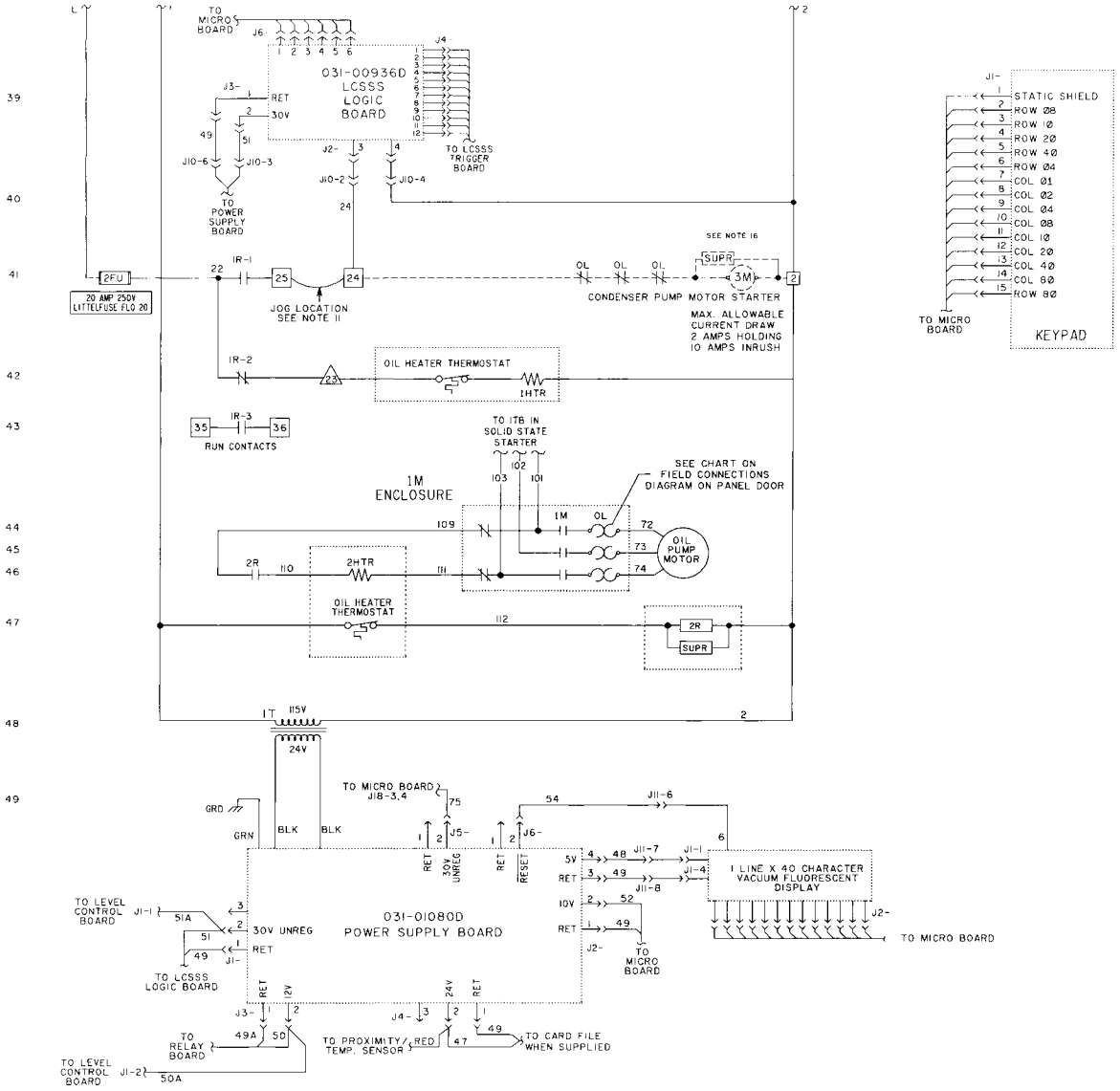
REF. 035-09324 (REV. G)



LD00907

(CONT'D. ON PAGES 3 & 4)

ELEMENTARY DIAGRAM (Cont'd.)



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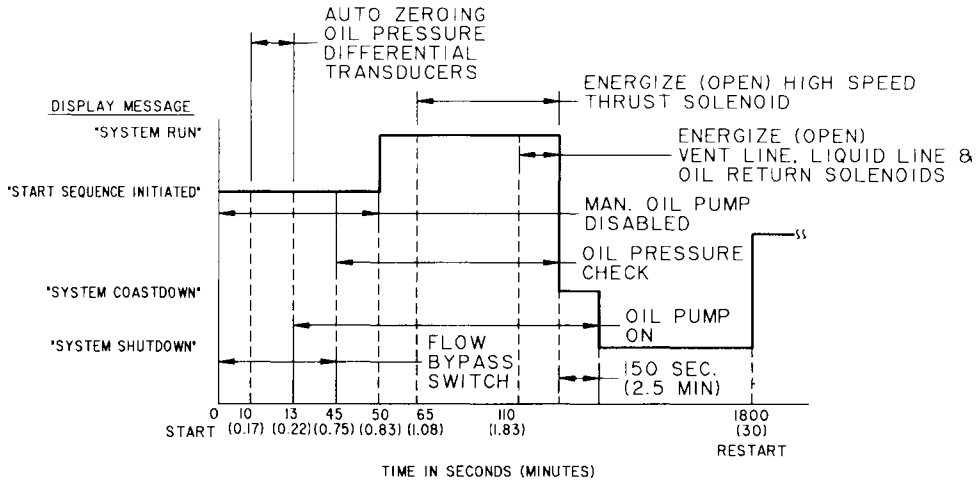
TIMING DIAGRAM



LD00910

LEGEND

1HTR	THERMOSTATICALLY CONTROLLED 1500 WATT OIL HEATER (115 VAC)
2HTR	THERMOSTATICALLY CONTROLLED 1500 WATT OIL HEATER (OIL PUMP VOLTAGE)
1M	3 PHASE OIL PUMP STARTER
3M	CONDENSER PUMP MOTOR STARTER
1R	COMPRESSOR MOTOR/ 1HTR HEATER CONTROL RELAY
2R	2HTR HEATER CONTROL RELAY
1SOL	OIL RETURN SOLENOID VALVE
2SOL	LIQUID LINE SOLENOID VALVE
3SOL	VENT LINE SOLENOID VALVE
4SOL	HIGH SPEED THRUST SOLENOID VALVE
1SS	DPDT 3 POSITION ROCKER SWITCH
2SS	4PST 4 POSITION MANUAL OVERRIDE SWITCH
1TB	TERMINAL BLOCK, FACTORY WIRING (IN SOLID STATE STARTER)
1T	CLASS 2 POWER SUPPLY TRANSFORMER
CM	SOLID STATE OVERLOAD/POWER FAULT CONTACTS (PART OF LCSSS LOGIC BOARD)
DOC	DIGITAL ORIFICE CONTROLLER
FDTS	FAULTY DISCHARGE TEMP. SENSOR
FLA	FULL LOAD AMPS (COMPRESSOR MOTOR)
FU	FUSE
HSDT	HIGH SPEED DRAIN TEMP. (PROBE LOACTED IN COMPRESSOR)
PGD	PROXIMITY GAP DISTANCE
HDT	REFRIG. HIGH DISCHARGE TEMP. (PROVIDED BY RT2)
HOP	HIGH OIL PRESSURE (PROVIDED BY TWO TRANSDUCERS)
HOT	HIGH OIL TEMPERATURE (PROVIDED BY RT3)
HP	HIGH PRESSURE CUTOUT
LEP	LOW EVAPORATOR PRESSURE (PROVIDED BY EVAP. PRESS TRANSDUCER)
LLS	LIQUID LEVEL SENSOR (PROBE)
ILEP	LOW EVAPORATOR PRESSURE CUTOUT (BRINE UNITS ONLY)
LOT	LOW OIL TEMPERATURE (PROVIDED BY RT3)
LOTD	LOW OIL TEMP. DIFFERENTIAL (PROVIDED BY RT3 AND CONDENSER PRESS. TRANSDUCER)
LWT	LOW WATER TEMPERATURE (PROVIDED BY RT1)
MOV	METAL OXIDE VARISTOR
OL	MOTOR STARTER OVERLOADS
OP	LOW OIL PRESSURE (PROVIDED BY TWO TRANSDUCERS)
OVA	ORIFICE VALVE ACTUATOR
PRV	PRE-ROTATION VANE MOTOR
RT1-RT9	RESISTANCE TEMPERATURE SENSING ELEMENT
RES	RESISTOR
SUPR	TRANSIENT SUPPRESSOR
TB1,TB3,TB6, TB7	TERMINAL BLOCK, FACTORY WIRING — △
TB2,TB4, TB5	TERMINAL BLOCK, FIELD CONNECTION — □
VMP	VANE MOTOR POTENTIOMETER
VMS	VANE MOTOR SWITCH
------	FIELD WIRING
———	FACTORY WIRING
.....	CIRCUIT BOARD OR ENCLOSURE BOUNDARY
→	JACK (J1,J2,...)
⊃—	PLUG (P1,P2,...)
◎	WIRE ENTRANCE HOLE IN CONTROL PANEL
—·—·—	OPTION (WHEN SUPPLIED) BY YORK.
—·—·—	MECHANICAL LINKAGE
(----)—	SHIELDED CABLE
	METAL OXIDE VARISTOR

LD00911

NOTES:

1. This wiring diagram describes the standard electronic control scheme for use with a YORK solid state starter. For details of standard modifications (by others), refer to Product Drawing Form 160.49-PW13.

2. Field wiring to be in accordance with the National Electrical Code as well as all other applicable codes and specifications. See Product Drawing Form 160.49-PW11 for field wiring connections.

3. Numbers along the left side of diagram are line identification numbers. The numbers along the right side indicate the line number location of relay contacts. An underlined contact location signifies a normally closed contact.

4. Main control panel Class 1 field wiring terminal connection points are indicated by numbers within a rectangle, i.e. [15] . Main control panel factory wiring terminal connection points are indicated by numbers within a triangle, i.e. △5△ . Component terminal markings are indicated by numbers within a circle, i.e. (C1) . Numbers adjacent to circuit lines are the circuit identification numbers.

5. To cycle unit on and off automatically with contacts other than those shown, install a cycling device between terminals [1] & [13] (line 27) (see note 7). If a cycling device is installed, jumper must be removed between terminals [1] & [13] .

6. To stop unit and not permit it to start again, install a stop device between terminals [1] & [8] (Line 23) (see note 7). A remote start-stop switch may be connected to terminals [1] , [7] & [8] (Lines 22 & 23) (see note 7). Remote start-stop switch (Line 22) is operative only in the “Remote” operating mode.

7. Device contact rating to be 5 milliamperes at 115 volts A.C.

8. Contact rating is 5A resistive at 120 volts A.C. or 240 volts A.C.

9. _____

10. For wiring diagram of solid state starter, refer to Product Form 160.49-PW14.

11. To check motor rotation on initial start-up, install momentary switch between terminals [24] & [25] (Line 35). Depress start switch. After approx. 30 seconds, jog motor with momentary switch. When proper rotation is obtained, replace momentary switch with jumper. Switch must have a minimum contact rating of 2 FLA, 10 LRA at 115 volts A.C.

12. Solid state motor overload (CM) on solid state starter logic board is set to trip at 105% FLA. Contact also opens for 1 second during momentary power interruption (power fault).

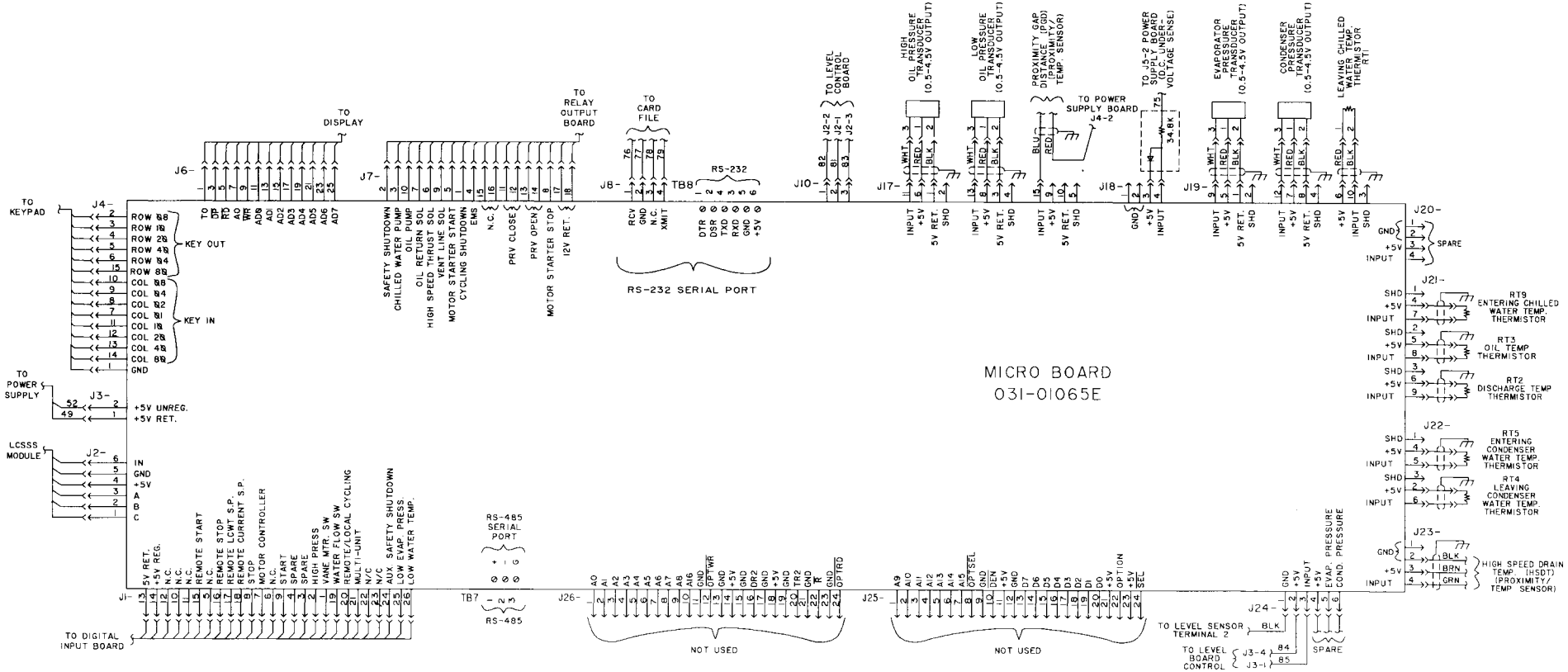
13. Contact rating is 5 amps resistive @ 250 volts A.C. & 30 volts D.C., 2 amp inductive (.4 PF) @ 250 volts A.C. & 30 volts D.C.

14. Field connected control power supply is not required, as control transformer is supplied on the rear of the solid state starter.

15. Wires 2* and L* are from solid state starter.

16. Each 115VAC field-connected inductive load: i.e., relay coil, motor starter coil, etc., shall have a transient suppressor wired in parallel with its coil, physically located at the coil. Spare transient suppressors and control circuit fuses are supplied in a bag attached to the top of the hinged panel.

ELEMENTARY DIAGRAM (Cont'd.)



LD00912

PRESSURE-TEMPERATURE CHART							
APPLICATION		DEVICE	UNITS	OPERATING POINT			
CHILLED WATER	BRINE			ON RISE		ON FALL	
✓	✓	HDT	DEG.F/DEG.C	220/104.4		219/103.9	
✓	✓	HOT	DEG.F/DEG.C	180/82.2		179/81.7	
✓	✓	OP	PSID/kPa	25/172		15/104	
✓	✓	HP (R-22)	PSIG/kPa	CUT-OUT 265/1827	INHIBIT PRV OPENING * 246.3/1698	ALLOW PRV OPENING * 245/1689	CUT-IN 205/1413
✓	✓	HP (R-134a)	PSIG/kPa	CUT-OUT 180/1241	INHIBIT PRV OPENING * 162.5/1120	ALLOW PRV OPENING * 160/1103	CUT-IN 120/827
✓		LEP (R-22)	PSIG/kPa	CUT-IN 54.4/375	ALLOW PRV OPENING 57.5/396	INHIBIT PRV OPENING 56.2/387	CUT-OUT 54.3/374
✓		LEP (R-134a)	PSIG/kPa	CUT-IN 25.1/173	ALLOW PRV OPENING 28.0/193	INHIBIT PRV OPENING 27.0/186	CUT-OUT 25.0/172
	✓	ILEP	PSIG				
✓	✓	HOP-FOR FIRST 7 MINUTES OF COMPR. OPERATION	PSID/kPa	100/689.5		99/682.6	
✓	✓	HOP-AFTER THE FIRST 7 MINUTES OF COMPR. OPERATION	PSID/kPa	60/413.7		59/406.8	
✓	✓	FDTS	DEG.F/DEG.C	30.0/-1.10		29.9/-1.20	
✓		LWT	DEG.F/DEG.C	CHILLED LIQUID TEMP. SETPOINT		AT OR ABOVE LCWT= 40/4.4, LWT=4/2.2 BELOW THE CHILLED LIQ. TEMP. SETPOINT: WHEN THE SETPOINT IS RAISED, LWT= 36/2.2 FOR 10 MINUTES. BELOW LWCT=40/4.4, LWT=36/2.2	
	✓	LWT	DEG.F/DEG.C	CHILLED LIQUID TEMP. SETPOINT		LWT = 4/2.2 BELOW THE CHILLED LIQ. TEMP. SETPOINT	
✓	✓	LOT	DEG.F/DEG.C	71.0/21.7		55.0/12.8	
✓	✓	LOTD †	DEG.F/DEG.C	30/16.7		29.9/16.6	
✓	✓	LOTD ††	DEG.F/DEG.C	40/22.2		39.9/22.1	
✓	✓	HSDT	DEG.F/DEG.C	CUTOUT 250/121.1		CUTIN 180/82.2 & MANUAL RESET	

* - *FUNCTION PROVIDED BY CONDENSER TRANSDUCER*
† - *APPLICABLE IF UNIT WAS SHUTDOWN FOR 30 MINS. OR LESS*
†† - *APPLICABLE IF UNIT WAS SHUTDOWN FOR GREATER THAN 30 MINS.*

LD00909

PRESSURE – TEMPERATURE CHART

COMPRESSOR MOTOR SUPPLY VOLTAGE RANGE - (V)	LOW LINE VOLTAGE OPERATING POINT		HIGH LINE VOLTAGE OPERATING POINT	
	CUTOUT - (V) (ON FALL)	CUTIN - (V) (ON RISE)	CUTOUT - (V) (ON RISE)	CUTIN - (V) (ON FALL)
380	305	331	415	414
400	320	349	436	435
415	335	362	454	453
440-480	370	400	524	523
550-600	460	502	655	654
SUPPLY VOLTAGE RANGE DISABLED	NONE	0	NONE	0

LD00918

CONNECTION DIAGRAM

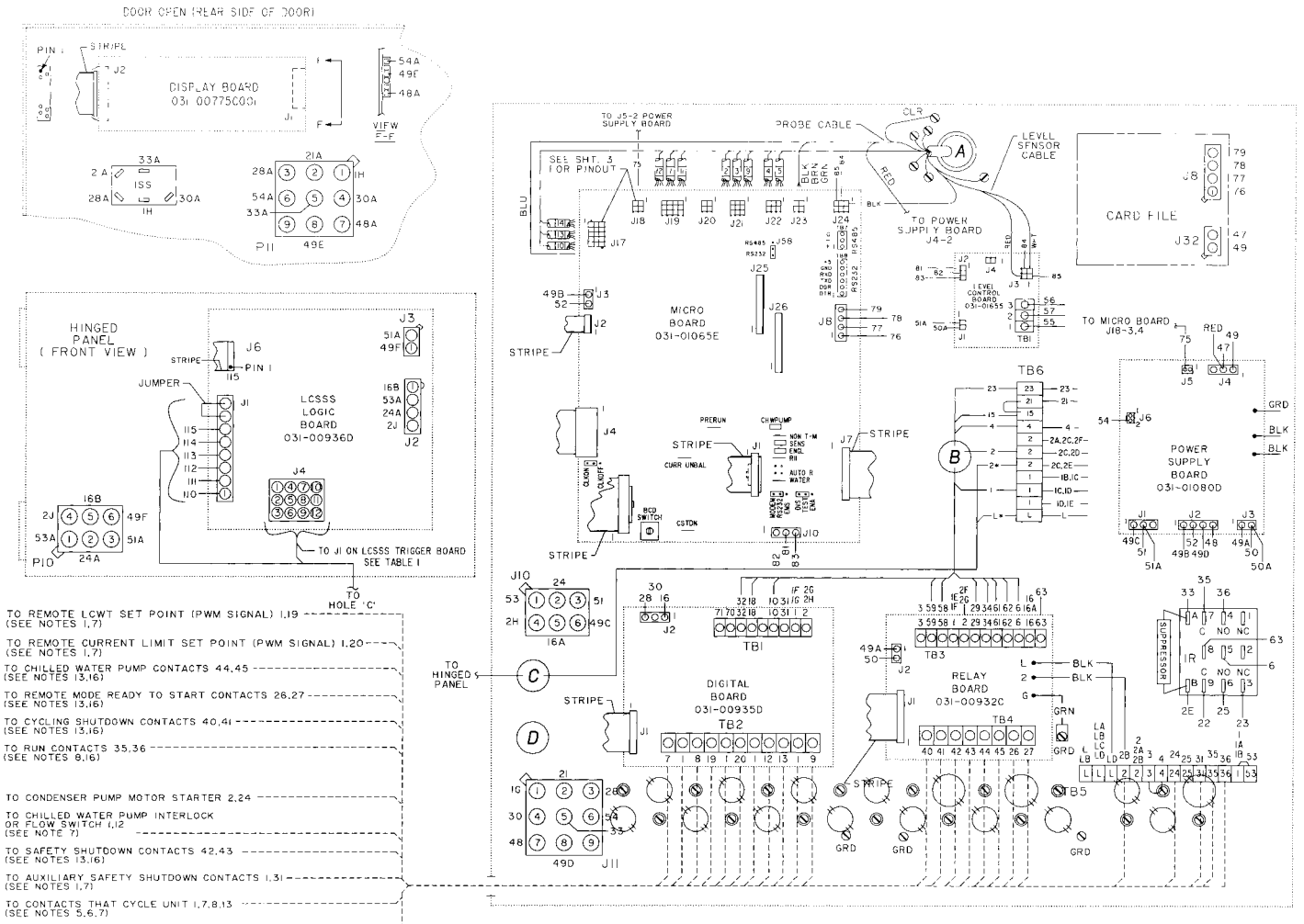


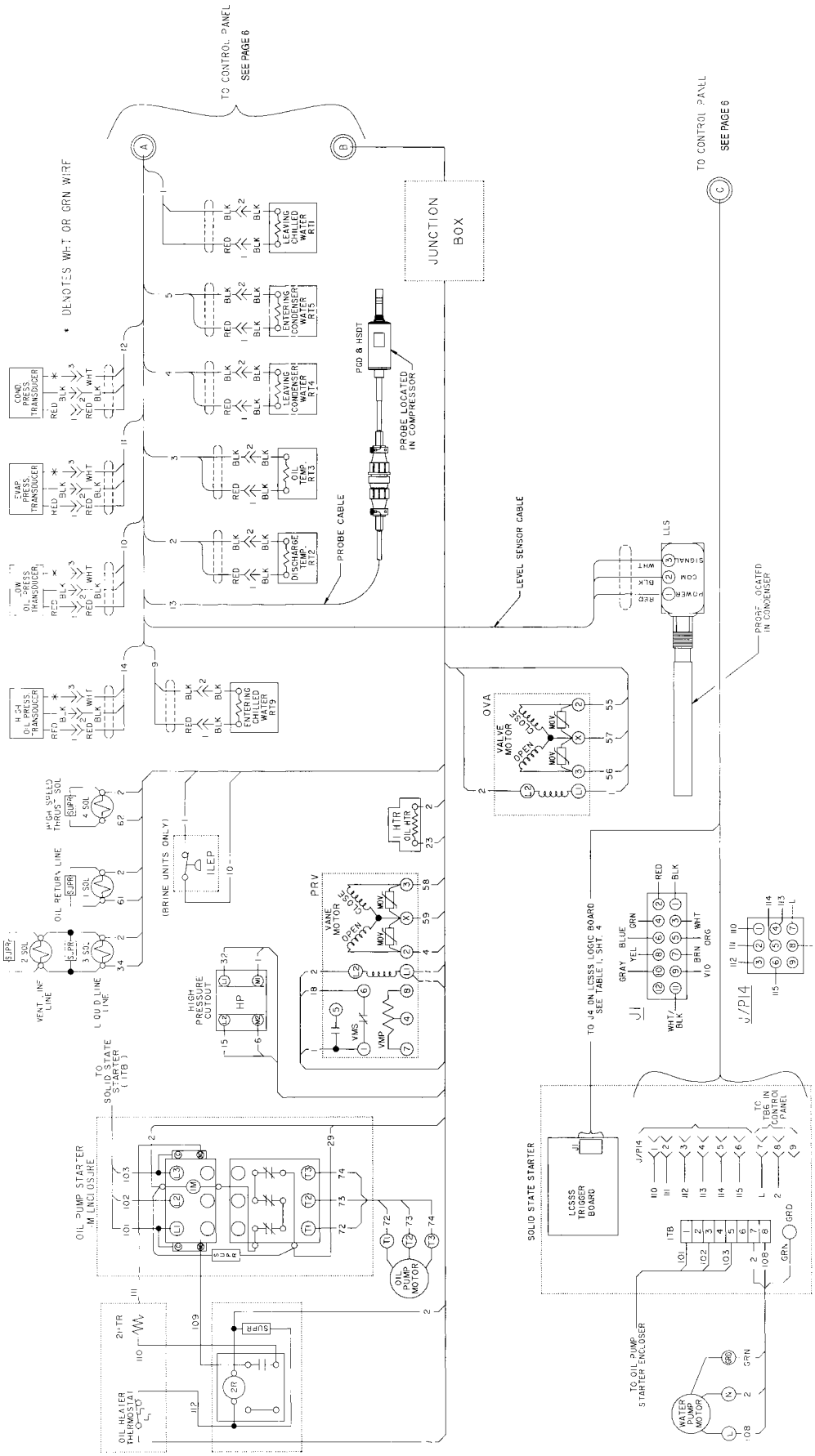
TABLE I

* CONNECTOR PIN	SHIELDED CABLE WIRE COLOR
1	BLK
2	RED
3	WHT
4	GRN
5	ORG
6	BLUE
7	BRN
8	YEL
9	VIOL
10	GRAY
11	WHT/BLK
12	DRAIN WIRE **

* - SAME PIN NUMBERS ARE USED AT BOTH ENDS OF CABLE.
** - NOT CONNECTED TO TRIGGER BOARD

(CONT'D. ON PAGE 7)

CONNECTION DIAGRAM (Cont'd.)



OIL PUMP MOTOR		OIL PUMP STARTER OVERLOAD HEATERS				
VOLTS-PH-HZ	FULL LOAD AMPS	MANUFACTURER	MANUFACTURER'S PART NO.	TRIP AMPS	DUAL ELEMENT * FUSE SIZE	% PROTECTION
200-3-60	7.2	FURNAS	K49	9.80	15	136
208-3-60	6.8		K43	8.55	15	126
220-3-60	6.7		K43	8.55	15	128
230-3-60	6.7		K43	8.55	15	128
240-3-60	6.7		K43	8.55	15	128
440-3-60	3.35		K32	4.23	7	126
460-3-60	3.35		K32	4.23	7	126
480-3-60	3.4		K33	4.67	7	137
550-3-60	2.6		K29	3.61	10#	139
575-3-60	2.6		K29	3.61	10#	139
600-3-60	2.7		K29	3.61	10#	134
380-3-50	3.4		K33	4.67	7	137
400-3-50	3.4		K33	4.67	7	137
415-3-50	3.6		K33	4.67	7	130

* Oil pump motor fuses located in Solid State Starter

Single element fuse size

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36USC380

P.O. Box 1592, York, Pennsylvania USA 17405-1592

Form 160.49-PW8 (297)
Supersedes: Nothing