



PRODUCT DRAWING

Supersedes: Nothing

FORM 160.48-PA20 (496)

**WIRING DIAGRAM,
MILLENNIUM MODEL YT LIQUID CHILLERS
MICROCOMPUTER CONTROL CENTER
WITH SOLID STATE STARTER**

YORK INTERNATIONAL CORPORATION
P.O. Box 1592, York, PA 17405

CONTRACTOR _____
ORDER NO. _____
YORK CONTRACT NO. _____
YORK ORDER NO. _____

PURCHASER _____
JOB NAME _____
LOCATION _____
ENGINEER _____

REFERENCE DATE _____

APPROVAL DATE _____

CONSTRUCTION DATE _____

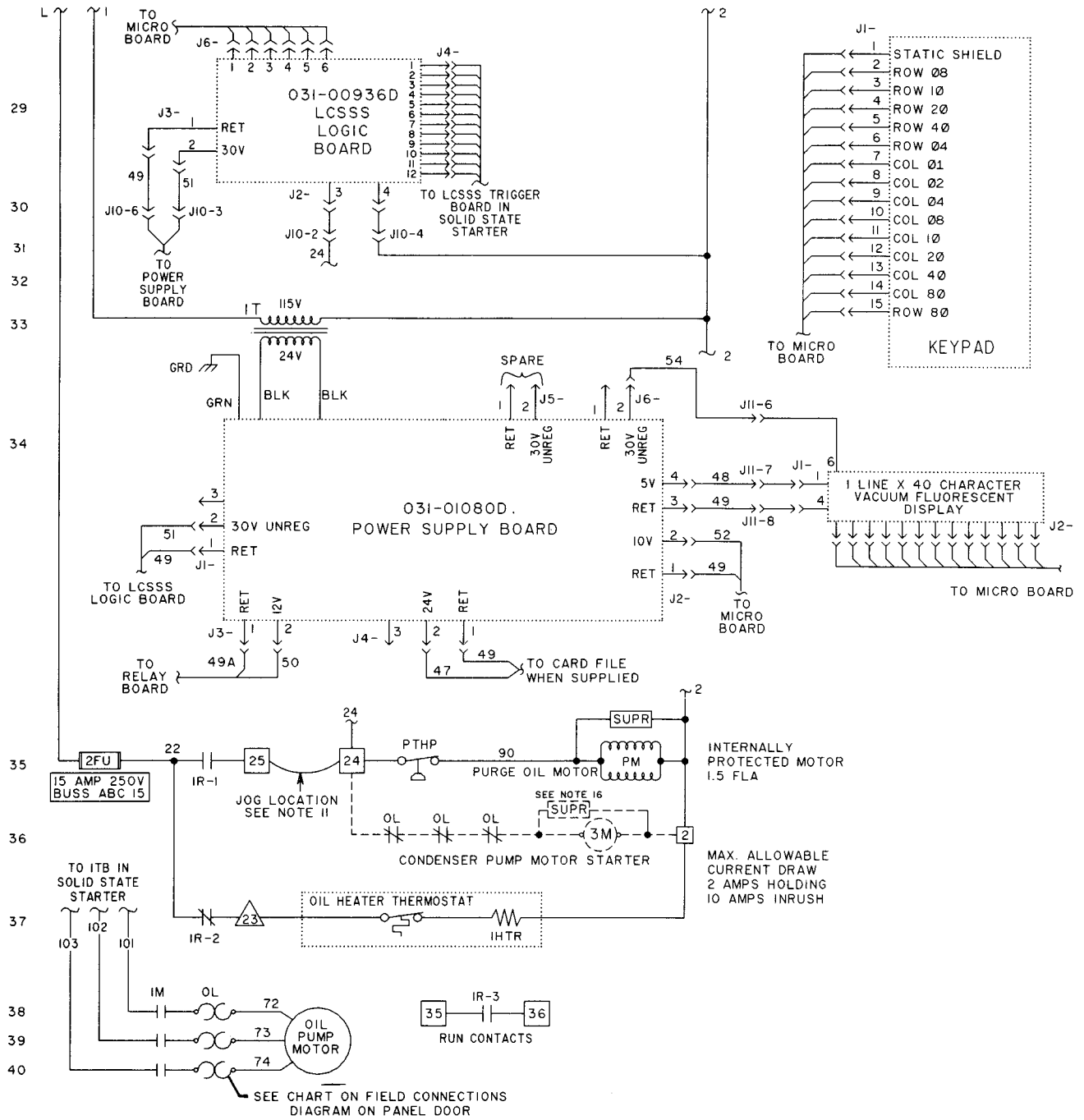
For use with York Centrifugal Liquid Chilling Units shown below.
MODELS YT G0 A1 B1 thru YT L6 D8 F2 (STYLE H)

JOB DATA:

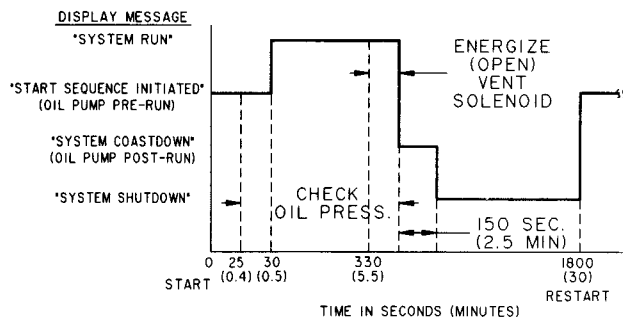
CHILLER MODEL NO. _____
NO. OF UNITS _____
COMPRESSOR MOTOR _____ VOLTS, 3-PHASE, _____ HZ
OIL PUMP MOTOR _____ VOLTS, 3-PHASE, _____ HZ, _____ FLA

Remarks:

ELEMENTARY DIAGRAM (CONT'D.)



TIMING DIAGRAM



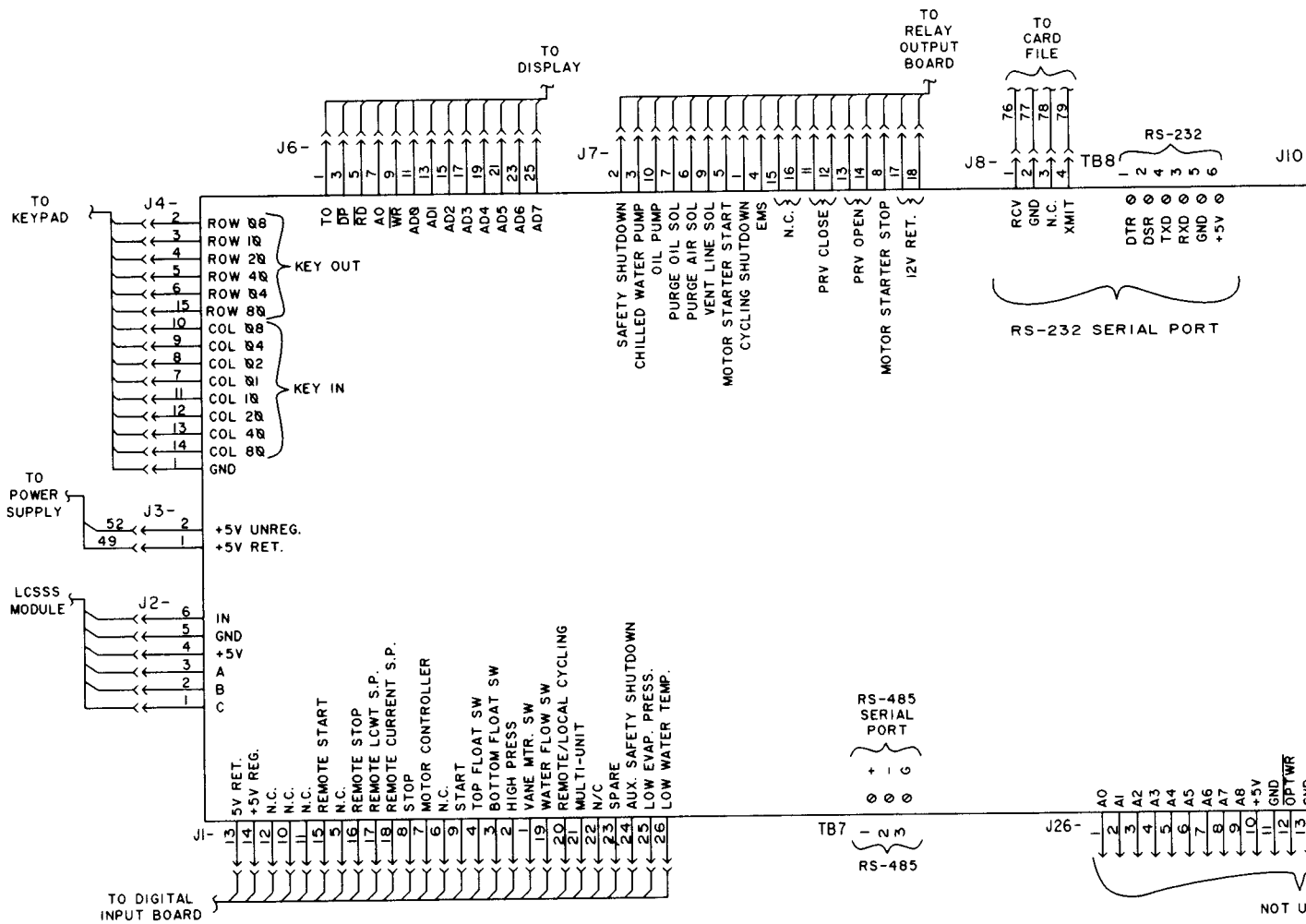
LEGEND

IHTR	THERMOSTATICALLY CONTROLLED 1000 WATT OIL HEATER	PTHP	PURGE TANK HIGH PRESSURE CUTOUT (MOUNTED IN PURGE TANK)
IM	3 PHASE OIL PUMP STARTER (MOUNTED IN PURGE PANEL)	POS	PURGE OIL SOLENOID VALVE (2 SOL & 4 SOL)
3M	CONDENSER PUMP MOTOR STARTER	RTI-RT9	RESISTANCE TEMPERATURE SENSING ELEMENT
IR	COMPRESSOR MOTOR/ HEATER CONTROL RELAY	RES	RESISTOR
ISOL	VENT LINE SOLENOID VALVE	SUPR	TRANSIENT SUPPRESSOR
2SOL,4SOL	PURGE OIL SOLENOID VALVES	TFS	PURGE TOP FLOAT SWITCH
3SOL	PURGE AIR EXHAUST SOLENOID VALVE	TB1,TB3,TB6	TERMINAL BLOCK, FACTORY WIRING
ISS	DPDT 3 POSITION ROCKER SWITCH	TB2,TB4, TB5	TERMINAL BLOCK, FIELD CONNECTION
ITB	TERMINAL BLOCK, FACTORY WIRING (IN SOLID STATE STARTER)	VMP	VANE MOTOR POTENTIOMETER
IT	CLASS 2 POWER SUPPLY TRANSFORMER	VMS	VANE MOTOR SWITCH (LOCATED IN PRV)
BFS	PURGE BOTTOM FLOAT SWITCH	-----	FIELD WIRING
CM	SOLID STATE OVERLOAD/POWER FAULT CONTACTS (PART OF LCSSS LOGIC BOARD)	=====	FACTORY WIRING
FDTs	FAULTY DISCHARGE TEMP. SENSOR (PROVIDED BY RTI)	CIRCUIT BOARD OR ENCLOSURE BOUNDARY
FLA	FULL LOAD AMPS (COMPRESSOR MOTOR)	→	JACK (J1,J2,...)
FU	FUSE	⋈	PLUG (P1,P2,...)
HDT	REFRIG. HIGH DISCHARGE TEMP. (PROVIDED BY RT2)		WIRE ENTRANCE HOLE IN CONTROL PANEL
HOP	HIGH OIL PRESSURE (PROVIDED BY TWO TRANSDUCERS)	-----	OPTION (WHEN SUPPLIED) BY YORK.
HOT	HIGH OIL TEMPERATURE (PROVIDED BY RT3)	-----	MECHANICAL LINKAGE
HP	HIGH PRESSURE CUTOUT (MOUNTED IN PURGE PANEL)		SHIELDED CABLE
LEP	LOW EVAPORATOR PRESSURE (PROVIDED BY EVAP. PRESS TRANSDUCER)		METAL OXIDE VARISTOR
ILEP	LOW EVAPORATOR PRESSURE CUTOUT (BRINE UNITS ONLY)		
LOT	LOW OIL TEMPERATURE (PROVIDED BY RT3)		
LWT	LOW WATER TEMPERATURE (PROVIDED BY RTI)		
MOV	METAL OXIDE VARISTOR		
OL	MOTOR STARTER OVERLOADS		
OP	LOW OIL PRESSURE (PROVIDED BY TWO TRANSDUCERS)		
PAES	PURGE AIR EXHAUST SOLENOID VALVE (3 SOL)		
PM	PURGE OIL MOTOR (MOUNTED IN PURGE PANEL)		

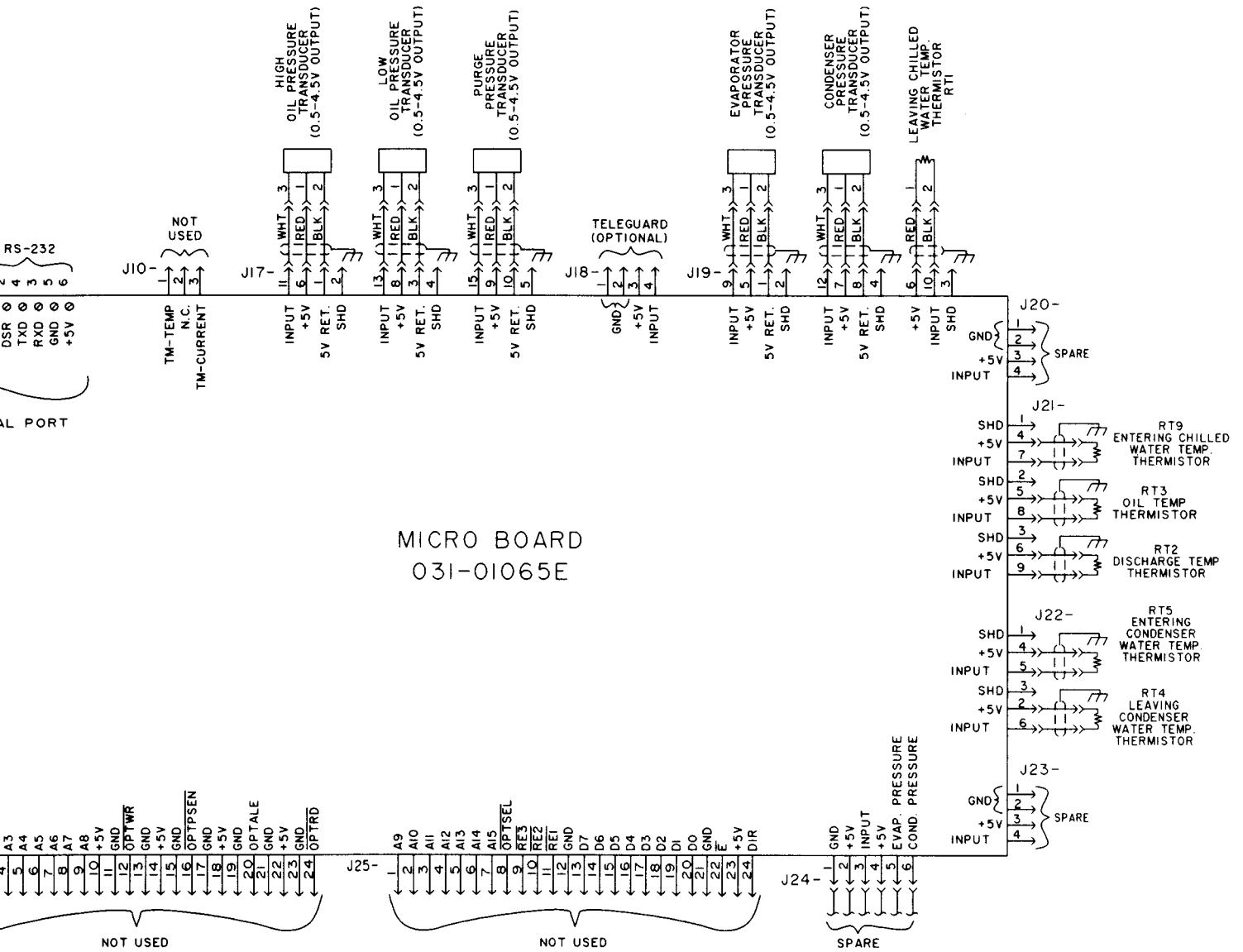
NOTES

1. This wiring diagram describes the standard electronic control scheme for use with a York Solid State Starter. For details of standard modifications, refer to Product Form 160.48-PA11.
2. Field wiring to be in accordance with the National Electrical code as well as all other applicable codes and specifications. See Product Form 160.48-PA9 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 @ 120 volts A.C. or 240 volts A.C.
- 9.
10. For wiring diagram of solid state starter, refer to Product Form 160.48-PA8.
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 contact (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 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



TERMINAL DIAGRAM (CONT'D.)

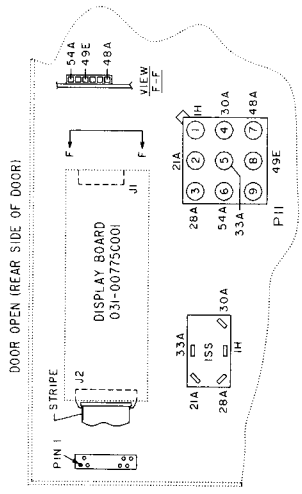


PRESSURE TEMPERATURE CHART							
APPLICATION		DEVICE	UNITS	OPERATING POINT			
CHILLED WATER	BRINE			ON RISE	ON FALL		
✓	✓	HDT	DEG.F/DEG.C	220/104.4	219/103.9		
✓	✓	HOT	DEG.F/DEG.C	180/82.2	179/81.7		
✓	✓	OP	PSID/kPa	20/137.9	15/103.4		
✓	✓	PAES	PSIA/kPa	90/620.4	80/551.5		
✓	✓	HP	PSIA/kPa	CUT-OUT 29.7/204.8	INHIBIT PRV OPENING * 28.8/198.6	ALLOW PRV OPENING * 28.6/197.2	CUT-IN 23.7/163.4
✓		LEP (R11)	PSIA/kPa	CUT-IN 5.43/37.4	ALLOW PRV OPENING 5.65/39.0	INHIBIT PRV OPENING 5.55/38.3	CUT-OUT 5.42/37.4
✓		LEP (R123)	PSIA/kPa	CUT-IN 4.41/30.4	ALLOW PRV OPENING 4.70/32.4	INHIBIT PRV OPENING 4.50/31.0	CUT-OUT 4.40/30.3
	✓	I LEP	PSIG				
✓	✓	HOP	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		
✓	✓	PTHP	PSIA/kPa	105/723	99/682	MANUAL RESET	

* - FUNCTION PROVIDED BY CONDENSER TRANSDUCER

LOW LINE VOLTAGE TRIP/RESET VALUES				
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)
200-208	160	174	227	226
220-240	185	200	262	261
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

CONNECTION DIAGRAM

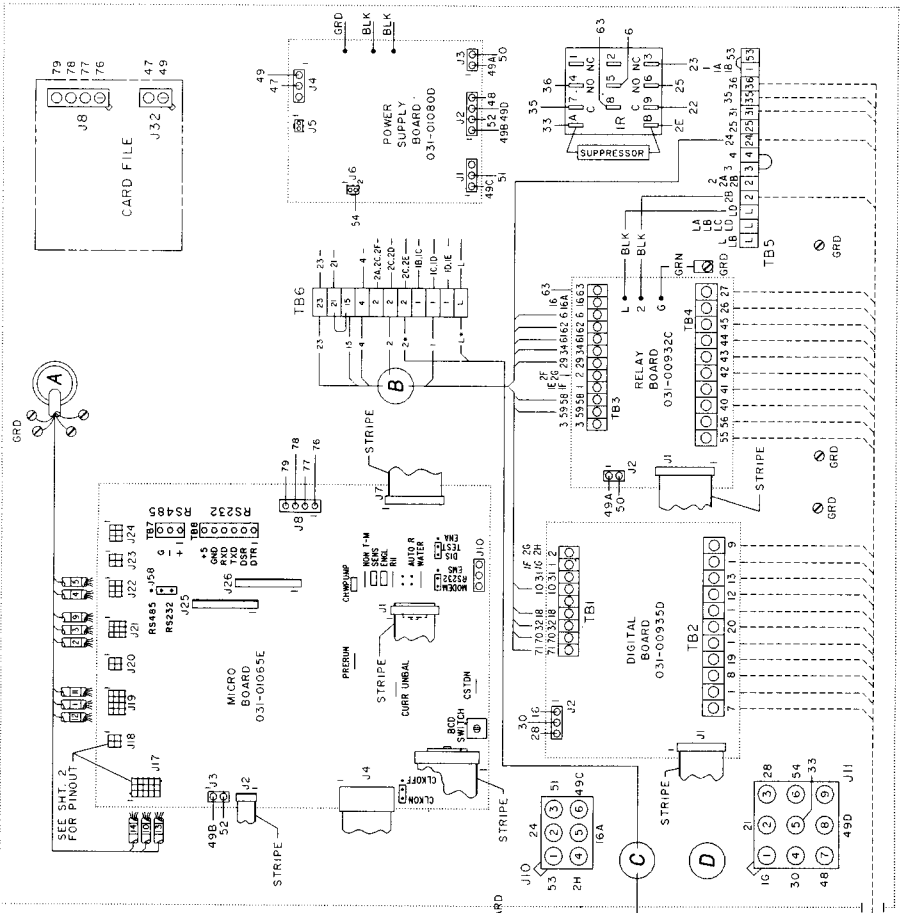
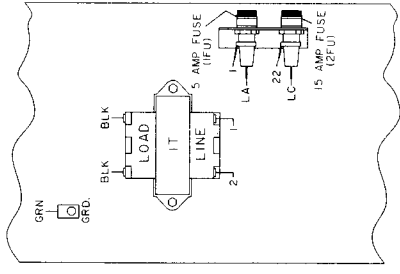


035-14018D
SHT. 3 OF 4
REV. -

TABLE 1

CONNECTOR PIN	SHIELDED WIRE COLOR
1	BLK
2	RED
3	WHT
4	GRN
5	ORG
6	BLU
7	BRN
8	VIO
9	YLW
10	GRY
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)

- TO REMOTE LCWT SET POINT (PWM SIGNAL) I.19 (SEE NOTES 1,7)
- TO REMOTE CURRENT LIMIT SET POINT (PWM SIGNAL) I.20 (SEE NOTES 1,7)
- TO CHILLED WATER PUMP CONTACTS 44.45 (SEE NOTES 13,16)
- TO REMOTE MODE READY TO START CONTACTS 26.27 (SEE NOTES 13,16)
- TO RUN CONTACTS 35.36 (SEE NOTES 8,16)
- TO EXCESS PURGE WARNING CONTACTS 55.56 (SEE NOTES 13,16)
- TO CONDENSER PUMP MOTOR STARTER 2.24
- TO CHILLED WATER PUMP INTERLOCK OR FLOW SWITCH I.12 (SEE NOTE 7)
- TO SAFETY SHUTDOWN CONTACTS 42.43 (SEE NOTES 13,16)
- TO SAFETY SHUTDOWN CONTACTS I.31 (SEE NOTES 1,7)
- TO CONTACTS THAT CYCLE UNIT I.7.8.13 (SEE NOTES 5,6,7)
- TO MULTI-UNIT SEQUENCE CONTACTS I.9 (SEE NOTES 1,7)

CHART 1 – OIL PUMP MOTOR AND STARTER FOR COMPRESSOR CODES B, C & E

OIL PUMP MOTOR		OIL PUMP STARTER OVERLOAD HEATERS					
VOLTS-PH-HZ	FULL LOAD AMPS	MANUFACTURER	MANUFACTURER'S PART NO.	SETTING	TRIP AMPS	DUAL ELEMENT FUSE SIZE*	% PROTECTION
200-3-60	3.00	CUTLER HAMMER	H2008B-3	B	4.200	12	130
208-3-60	3.16		H2008B-3	B	4.424	12	123
220-3-60	3.22		H2008B-3	B	4.508	10	121
230-3-60	3.36		H2008B-3	C	4.704	10	136
240-3-60	3.38		H2008B-3	C	4.732	10	135
440-3-60	1.61		H2007B-3	A	2.254	5	134
460-3-60	1.68		H2007B-3	A	2.352	5	128
480-3-60	1.75		H2007B-3	A	2.450	5	123
550-3-60	1.30		H2006B-3	A	1.820	5•	138
575-3-60	1.25		H2005B-3	B	1.750	5•	116
600-3-60	1.23	H2005B-3	B	1.722	5•	118	
380-3-50	2.20	H2007B-3	C	3.080	6	138	
400-3-50	2.20	H2007B-3	C	3.080	6	138	
415-3-50	2.20	H2007B-3	C	3.080	6	138	

CHART 2 – OIL PUMP MOTOR AND STARTER FOR COMPRESSOR CODE F

OIL PUMP MOTOR		OIL PUMP STARTER OVERLOAD HEATERS					
VOLTS-PH-HZ	FULL LOAD AMPS	MANUFACTURER	MANUFACTURER'S PART NO.	SETTING	TRIP AMPS	DUAL ELEMENT FUSE SIZE*	% PROTECTION
200-3-60	3.90	CUTLER HAMMER	H2009B-3	A	5.460	12	117
208-3-60	3.98		H2009B-3	B	5.572	12	138
220-3-60	4.04		H2009B-3	B	5.656	10	136
230-3-60	4.29		H2009B-3	B	6.006	10	128
240-3-60	4.57		H2009B-3	B	6.398	10	120
440-3-60	2.02	H2007B-3	B	2.828	5	129	
460-3-60	2.15	H2007B-3	B	3.010	5	121	
480-3-60	2.29	H2007B-3	C	3.206	5	133	
550-3-60	1.63	H2007B-3	A	2.282	5•	132	
575-3-60	1.56	E7007B-3	A	2.184	5•	138	
600-3-60	1.50	H2006B-3	A	2.100	5•	119	
380-3-50	2.20	H2007B-3	C	3.080	6	138	
400-3-50	2.20	H2007B-3	C	3.080	6	138	
415-3-50	2.20	H2007B-3	C	3.080	6	138	

- * Oil pump motor fuses located in Solid State Starter
- Single element fuse size

