YORK® **PRODUCT DRAWING** YORK INTERNATIONAL CORPORATION P.O. Box 1592, York, PA 17405	Supersedes: Nothing Form 160.55-PW3 (799) **WIRING DIAGRAM, *MILLENNIUM*™ MODEL YT (STYLE J) LIQUID CHILLERS GRAPHIC CONTROL CENTER WITH VARIABLE SPEED DRIVE**
CONTRACTOR _____ ORDER NO. _____ YORK CONTRACT NO. _____ YORK ORDER NO. _____	PURCHASER _____ JOB NAME _____ LOCATION _____ ENGINEER _____
☐ REFERENCE DATE _____	☐ APPROVAL DATE _____ ☐ CONSTRUCTION DATE _____

JOB DATA:

CHILLER MODEL NO. YT _____

NO. OF UNITS _____

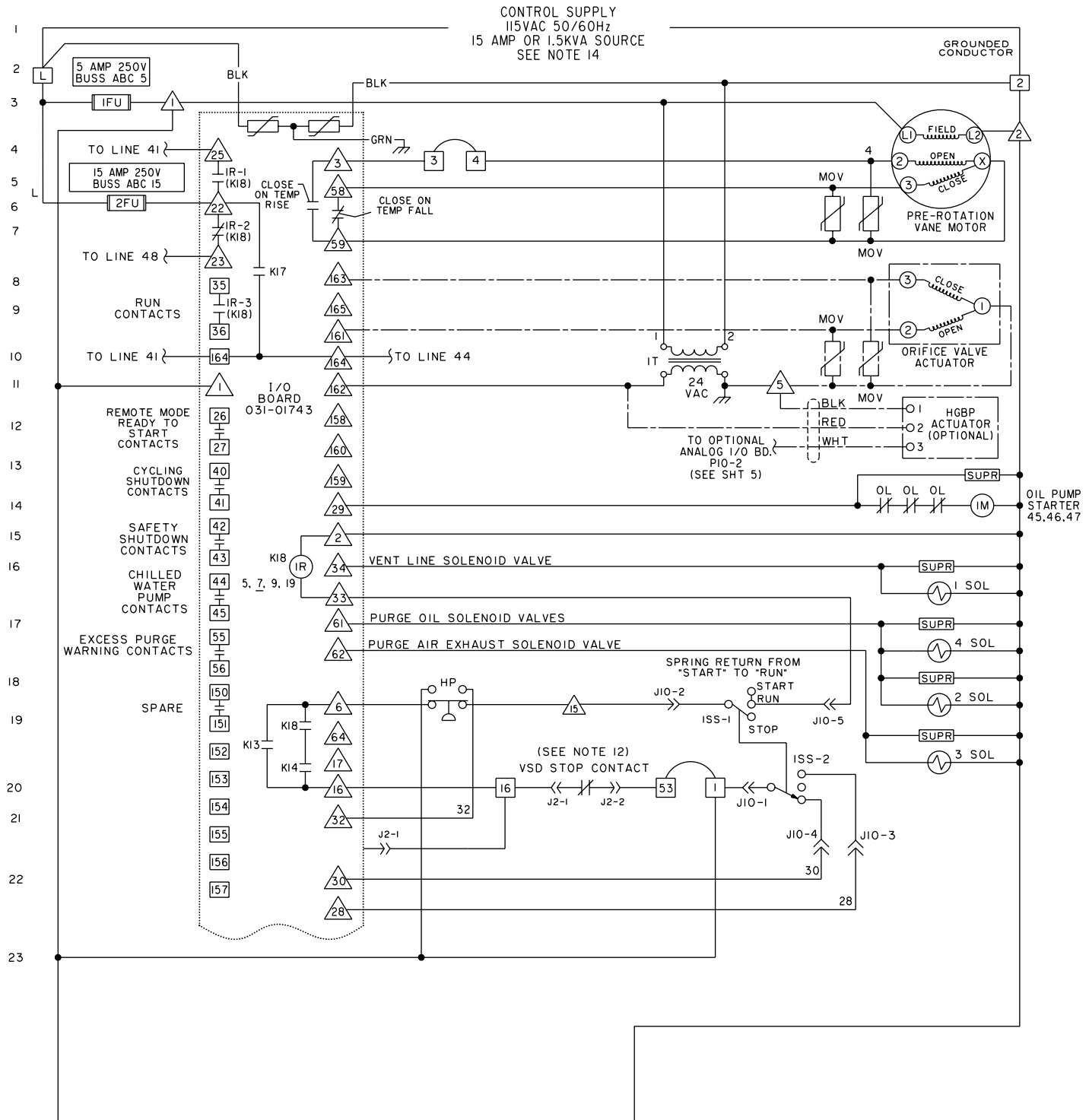
COMPRESSOR MOTOR _____ VOLTS, 3-PHASE, _____ Hz

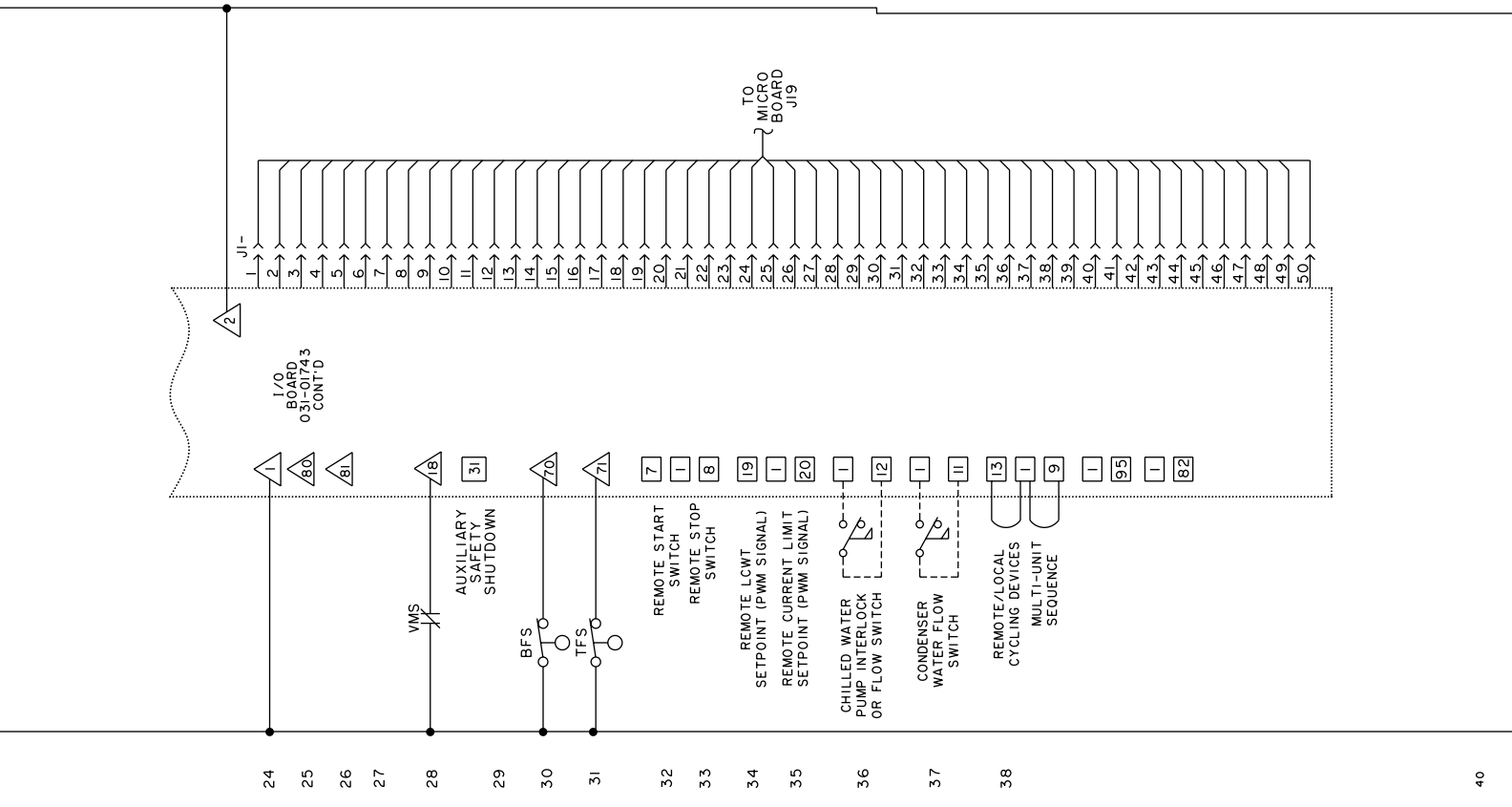
OIL PUMP MOTOR _____ VOLTS, 3-PHASE, _____ Hz, _____FLA

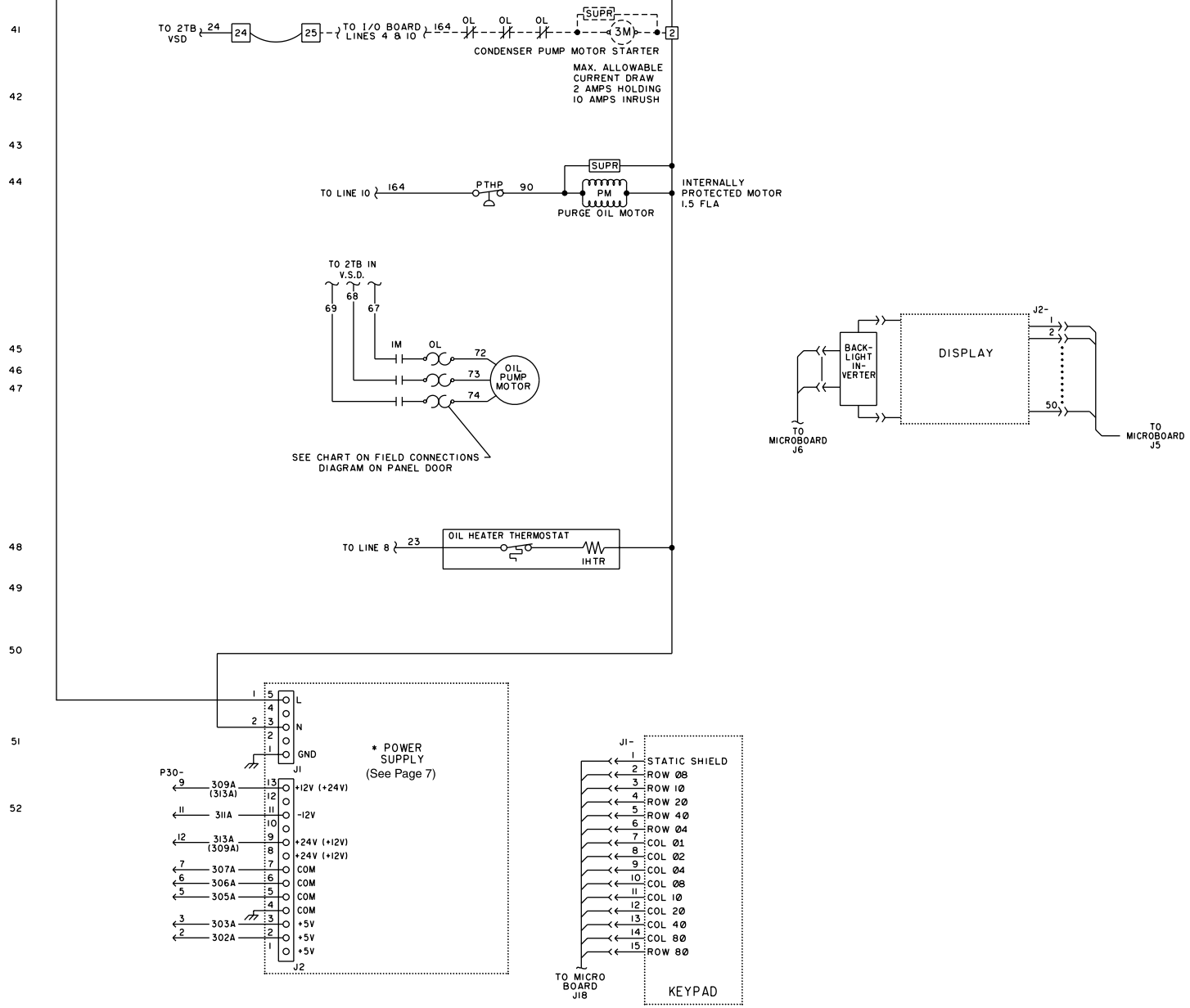
REMARKS:

DWG. 035-16287 (REV. –)

ELEMENTARY DIAGRAM

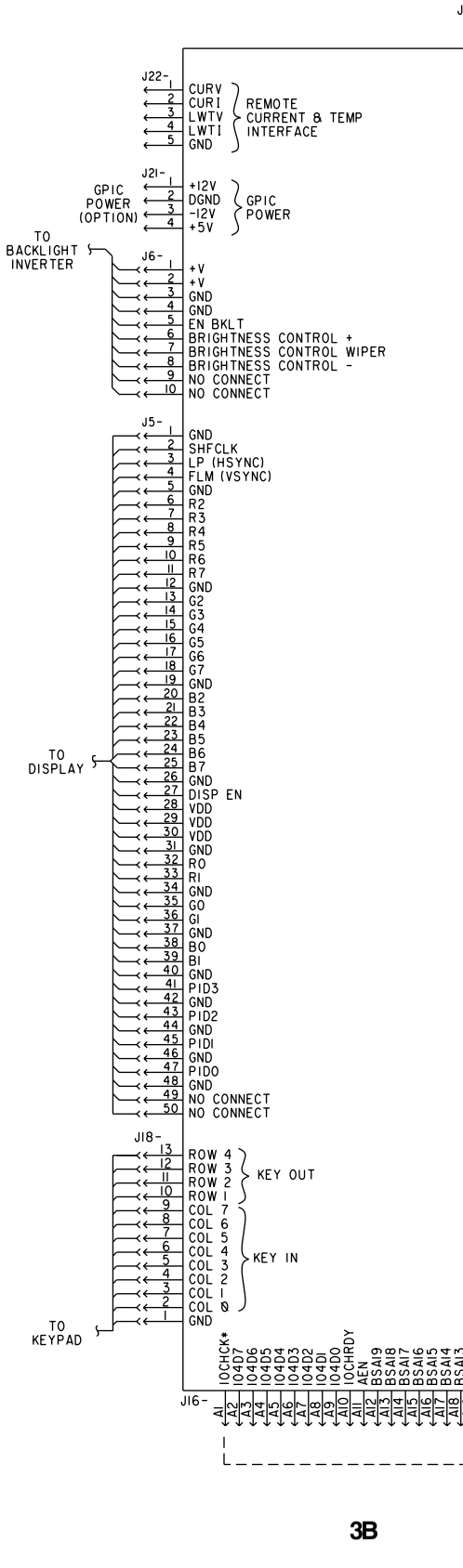



TO MICRO BOARD J19
J1-
I/O BOARD 031-01743 CONT'D
VMS
AUXILIARY SAFETY SHUTDOWN
BFS
TFS
REMOTE START SWITCH
REMOTE STOP SWITCH
REMOTE LCWT SETPOINT (PWM SIGNAL)
REMOTE CURRENT LIMIT SETPOINT (PWM SIGNAL)
CHILLED WATER PUMP INTERLOCK OR FLOW SWITCH
CONDENSER WATER FLOW SWITCH
REMOTE/LOCAL CYCLING DEVICES
MULTI-UNIT SEQUENCE

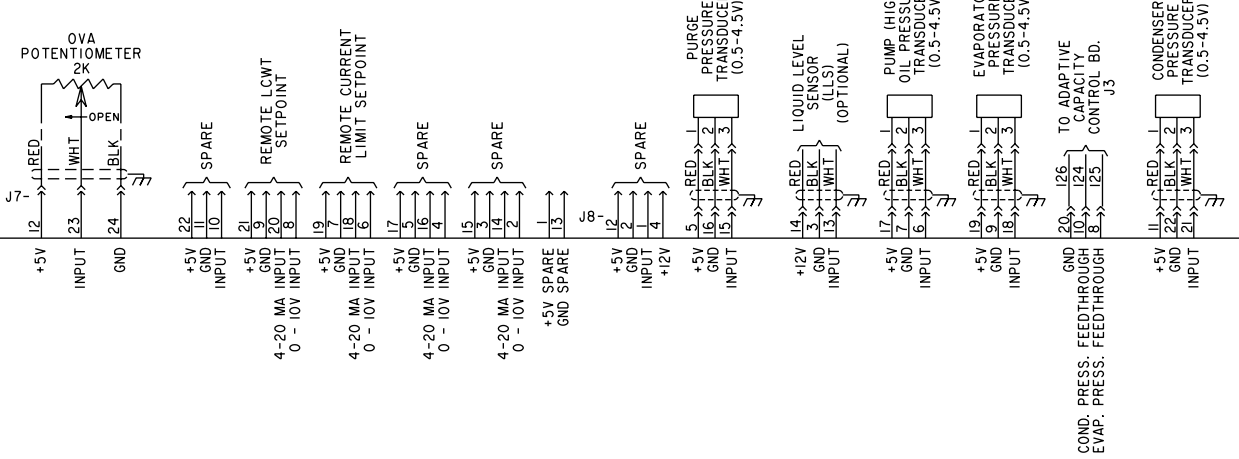

41
42
43
44
45
46
47
48
49
50
51
52
TO 2TB VSD
24
24
25
TO I/O BOARD LINES 4 & 10
164
OL
OL
OL
SUPR
3M
2
CONDENSER PUMP MOTOR STARTER
MAX. ALLOWABLE CURRENT DRAW 2 AMPS HOLDING 10 AMPS INRUSH
TO LINE 10
164
PTHP
90
SUPR
PM
PURGE OIL MOTOR
INTERNALLY PROTECTED MOTOR 1.5 FLA
TO 2TB IN V.S.D.
69
68
67
IM
OL
72
73
74
OIL PUMP MOTOR
SEE CHART ON FIELD CONNECTIONS DIAGRAM ON PANEL DOOR
J2-
1
2
50
BACK-LIGHT IN-VERTER
DISPLAY
TO MICROBOARD J6
TO MICROBOARD J5
TO LINE 8
23
OIL HEATER THERMOSTAT
IHTR
1
2
L
N
GND
J1
* POWER SUPPLY
(See Page 7)
P30-
9
309A (313A)
11
311A
12
313A (309A)
7
307A
6
306A
5
305A
3
303A
2
302A
+12V (+24V)
-12V
+24V (+12V)
+24V (+12V)
COM
COM
COM
COM
+5V
+5V
+5V
J2
J1-
STATIC SHIELD
ROW 08
ROW 10
ROW 20
ROW 40
ROW 04
COL 01
COL 02
COL 04
COL 08
COL 10
COL 20
COL 40
COL 80
ROW 80
TO MICRO BOARD J18
KEYPAD

LD04592

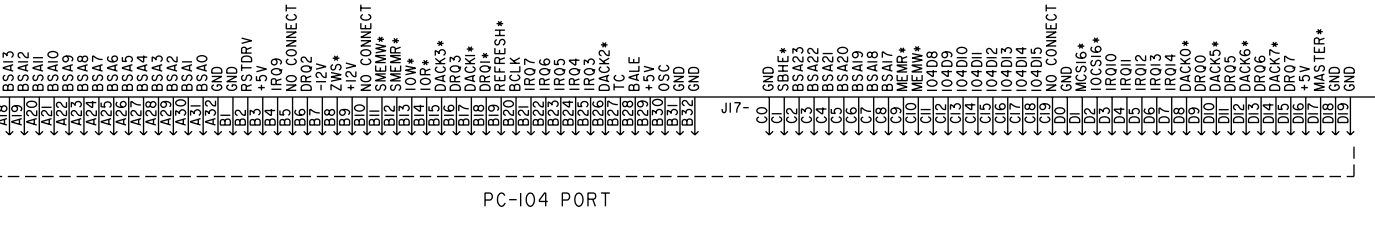
ELEMENTARY DIA

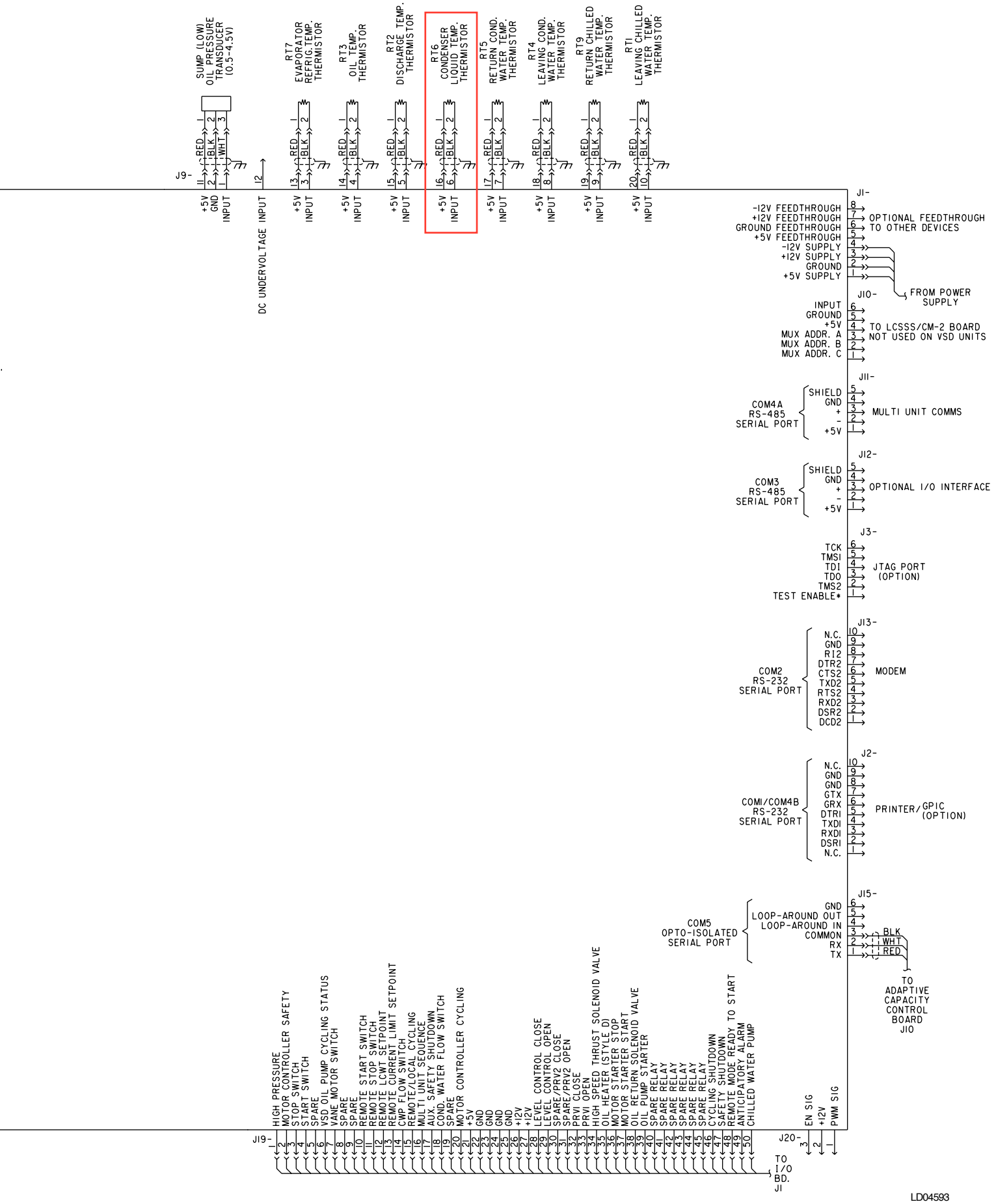


AGRAM (Cont'd)



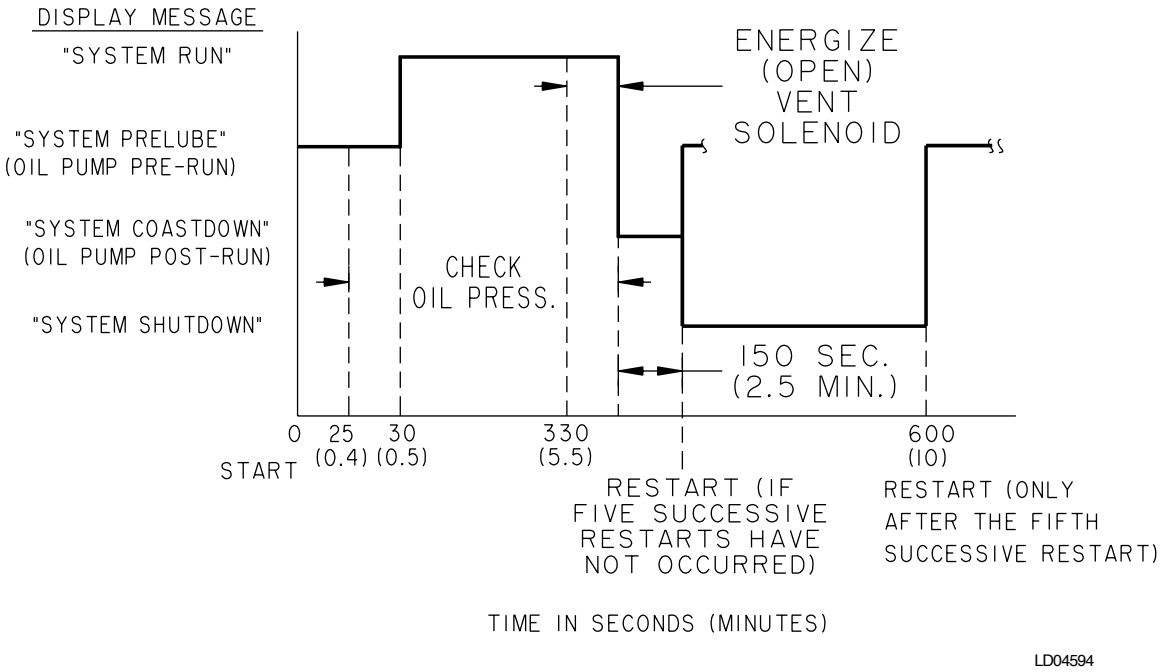
MICROBOARD
031-01730




SUMP (LOW) OIL PRESSURE TRANSDUCER (0.5-4.5V)
RT7 EVAPORATOR REFRIG.TEMP. THERMISTOR
RT3 OIL TEMP. THERMISTOR
RT2 DISCHARGE TEMP. THERMISTOR
RT6 CONDENSER LIQUID TEMP. THERMISTOR
RT5 RETURN COND. WATER TEMP. THERMISTOR
RT4 LEAVING COND. WATER TEMP. THERMISTOR
RT9 RETURN CHILLED WATER TEMP. THERMISTOR
RT1 LEAVING CHILLED WATER TEMP. THERMISTOR
J9-
+5V INPUT
GND INPUT
DC UNDERVOLTAGE INPUT
J1-
-12V FEEDTHROUGH
+12V FEEDTHROUGH
GROUND FEEDTHROUGH
+5V FEEDTHROUGH
OPTIONAL FEEDTHROUGH TO OTHER DEVICES
-12V SUPPLY
+12V SUPPLY
GROUND
+5V SUPPLY
FROM POWER SUPPLY
J10-
INPUT
GROUND
+5V
MUX ADDR. A
MUX ADDR. B
MUX ADDR. C
TO LCSSS/CM-2 BOARD NOT USED ON VSD UNITS
J11-
COM4A RS-485 SERIAL PORT
SHIELD
GND
+
-
+5V
MULTI UNIT COMMS
J12-
COM3 RS-485 SERIAL PORT
OPTIONAL I/O INTERFACE
J3-
TCK
TMSI
TDI
TDO
TMS2
TEST ENABLE*
JTAG PORT (OPTION)
J13-
COM2 RS-232 SERIAL PORT
N.C.
GND
RI2
DTR2
CTS2
TXD2
RTS2
RXD2
DSR2
DCD2
MODEM
J2-
COMI/COM4B RS-232 SERIAL PORT
GND
GTX
GRX
DTRI
TXDI
RXDI
DSRI
PRINTER/GPIC (OPTION)
J15-
COM5 OPTO-ISOLATED SERIAL PORT
LOOP-AROUND OUT
LOOP-AROUND IN
COMMON
RX
TX
BLK
WHT
RED
TO ADAPTIVE CAPACITY CONTROL BOARD JIO
J19-
HIGH PRESSURE
MOTOR CONTROLLER SAFETY
STOP SWITCH
START SWITCH
SPARE
VSD OIL PUMP CYCLING STATUS
VANE MOTOR SWITCH
SPARE
SPARE
REMOTE START SWITCH
REMOTE STOP SWITCH
REMOTE LOWT SETPOINT
REMOTE CURRENT LIMIT SETPOINT
CWP FLOW SWITCH
REMOTE/LOCAL CYCLING
MULTI UNIT SEQUENCE
AUX. SAFETY SHUTDOWN
COND. WATER FLOW SWITCH
SPARE
MOTOR CONTROLLER CYCLING
+5V
GND
GND
GND
GND
GND
+12V
+12V
LEVEL CONTROL CLOSE
LEVEL CONTROL OPEN
SPARE/PRV2 CLOSE
SPARE/PRV2 OPEN
PRVI CLOSE
PRVI OPEN
HIGH SPEED THRUST SOLENOID VALVE
OIL HEATER (STYLE D)
MOTOR STARTER STOP
MOTOR STARTER START
OIL RETURN SOLENOID VALVE
OIL PUMP STARTER
SPARE RELAY
SPARE RELAY
SPARE RELAY
SPARE RELAY
SPARE RELAY
SPARE RELAY
CYCLING SHUTDOWN
SAFETY SHUTDOWN
REMOTE MODE READY TO START
ANTICIPATORY ALARM
CHILLED WATER PUMP
TO I/O BD. JI
J20-
EN SIG
+12V
PWM SIG

LD04593

TIMING DIAGRAM



LD04594

NOTES:

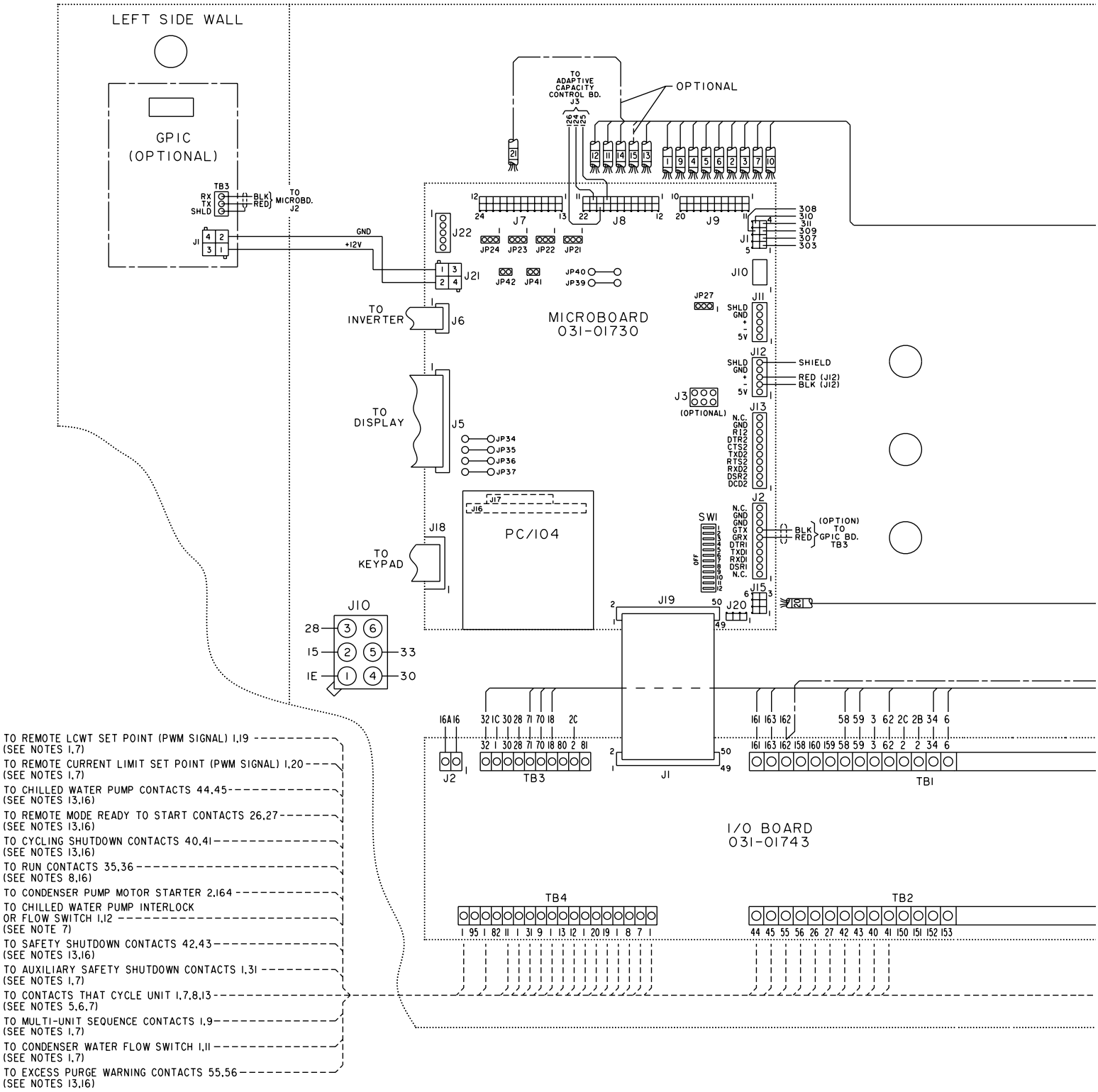
1. This wiring diagram describes the standard electronic control scheme for use with a YORK Solid State Starter. For details of standard modifications, refer to Product Form 160.55-PW7.
2. Field wiring to be in accordance with the National Electrical Code as well as all other applicable codes and specifications. See Product Form 160.55-PW6 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 38) (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 33) (see note 7). A remote start-stop switch may be connected to terminals [1] , [7] & [8] (Lines 32 & 33) (see note 7). Remote start-stop switch (Line 32) 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 5 Amp resistive @ 120 Volts A.C. or 240 Volts A.C.
9. _____
10. For wiring diagram of V.S.D., refer to product form 160.00-PW1, -PW2 or PW3.
11. Run contact (TM) on V.S.D. logic board is set to trip at 105% FLA.
12. Contact rating is 5 Amp resistive @ 250 Volts A.C. & 30 Volts D.C., 2 Amp inductive (.4 PF) @ 250 Volts A.C. & 30 Volts D.C.
13. Field connected control power supply is not required, as control transformer is supplied on the V.S.D.
14. Wires 2* and L* are from the V.S.D.
15. 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 cable clamp on the left, inside wall of the control panel.

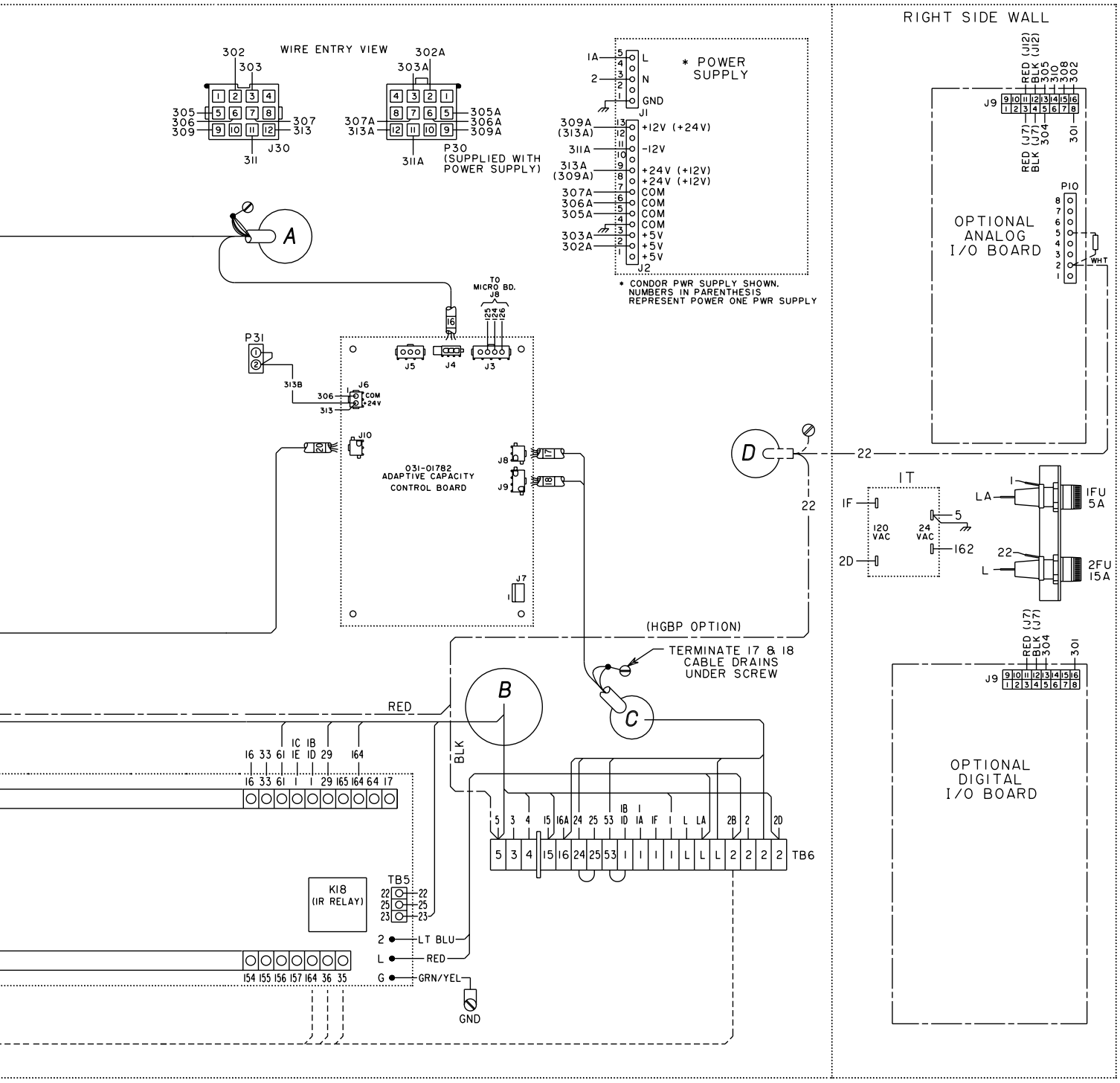
LEGEND

IHTR	THERMOSTATICALLY CONTROLLED 1000 WATT OIL HEATER
IM	3 PHASE OIL PUMP STARTER (MOUNTED IN PURGE PANEL)
3M	CONDENSER PUMP MOTOR STARTER
IR	VSD RUN / IHTR HEATER CONTROL RELAY (KI8 - LOCATED ON I. O BD.)
ISOL	VENT LINE SOLENOID VALVE
2SOL,4SOL	PURGE OIL SOLENOID VALVES
3SOL	PURGE AIR EXHAUST SOLENOID VALVE
ISS	DPDT 3 POSITION ROCKER SWITCH
2TB	TERMINAL BLOCK, FACTORY WIRING (IN V.S.D.)
3TB	TERMINAL BLOCK, FACTORY WIRING (IN V.S.D.)
IT	CLASS 2 POWER SUPPLY TRANSFORMER
BFS	PURGE BOTTOM FLOAT SWITCH
FDTS	FAULTY DISCHARGE TEMP. SENSOR (PROVIDED BY RTI)
FLA	FULL LOAD AMPS (COMPRESSOR MOTOR)
FU	FUSE
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 (MOUNTED IN PURGE PANEL)
LEP	LOW EVAPORATOR PRESSURE (PROVIDED BY EVAP. PRESS TRANSDUCER)
LLS	LIQUID LEVEL SENSOR (PROBE)
LOT	LOW OIL TEMPERATURE (PROVIDED BY RT3)
LWT	LOW WATER TEMPERATURE (PROVIDED BY RTI)
HGBP	HOT GAS BYPASS
MOV	METAL OXIDE VARISTOR
OL	MOTOR STARTER OVERLOADS
OP	LOW OIL PRESSURE (PROVIDED BY TWO TRANSDUCERS)
PAES	PURGE AIR EXHAUST SOLENOID VALVE (3SOL)
PM	PURGE OIL MOTOR (MOUNTED ON TOP OF CONDENSER)
POS	PURGE OIL SOLENOID VALVE (2SOL & 4SOL)
PTHP	PURGE TANK HIGH PRESSURE CUTOUT (MOUNTED IN PURGE PANEL)
RTI-RT9	RESISTANCE TEMPERATURE SENSING ELEMENT
RES	RESISTOR
SUPR	TRANSIENT SUPPRESSOR
TBI,TB3,TB5, TB6 (TOP)	TERMINAL BLOCK, FACTORY WIRING — △
TB2,TB4, TB6 (BOTTOM)	TERMINAL BLOCK, FIELD CONNECTION — □
TFS	PURGE TOP FLOAT SWITCH
TM	RUN CONTACT FROM V.S.D.
VMP	VANE MOTOR POTENTIOMETER
VMS	VANE MOTOR SWITCH
– – – – – –	FIELD WIRING
———	FACTORY WIRING
.....	CIRCUIT BOARD OR ENCLOSURE BOUNDARY
→	JACK (JI,J2,...)
⊃—	PLUG (PI,P2,...)
◎	WIRE ENTRANCE HOLE IN CONTROL PANEL
—— – ——	OPTION (WHEN SUPPLIED) BY YORK.
—— - - ——	MECHANICAL LINKAGE
(– – – –)—	SHIELDED CABLE
⊣▭⊢	METAL OXIDE VARISTOR
KI3,KI4,KI7	RELAYS MOUNTED ON I/O BOARD - SEE OPERATOR'S MANUAL

LD04595

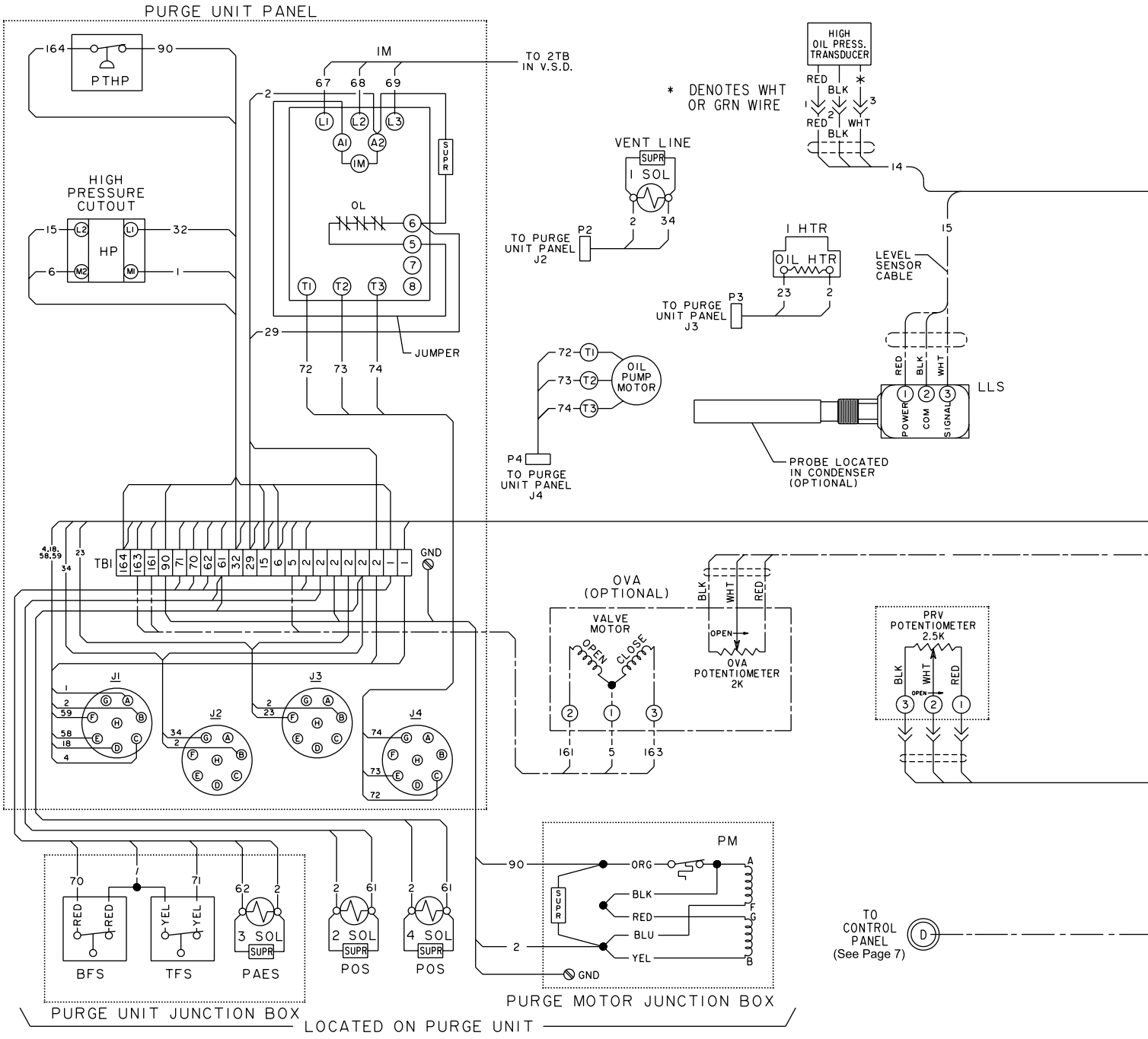
CONNECTION DIAGRAM

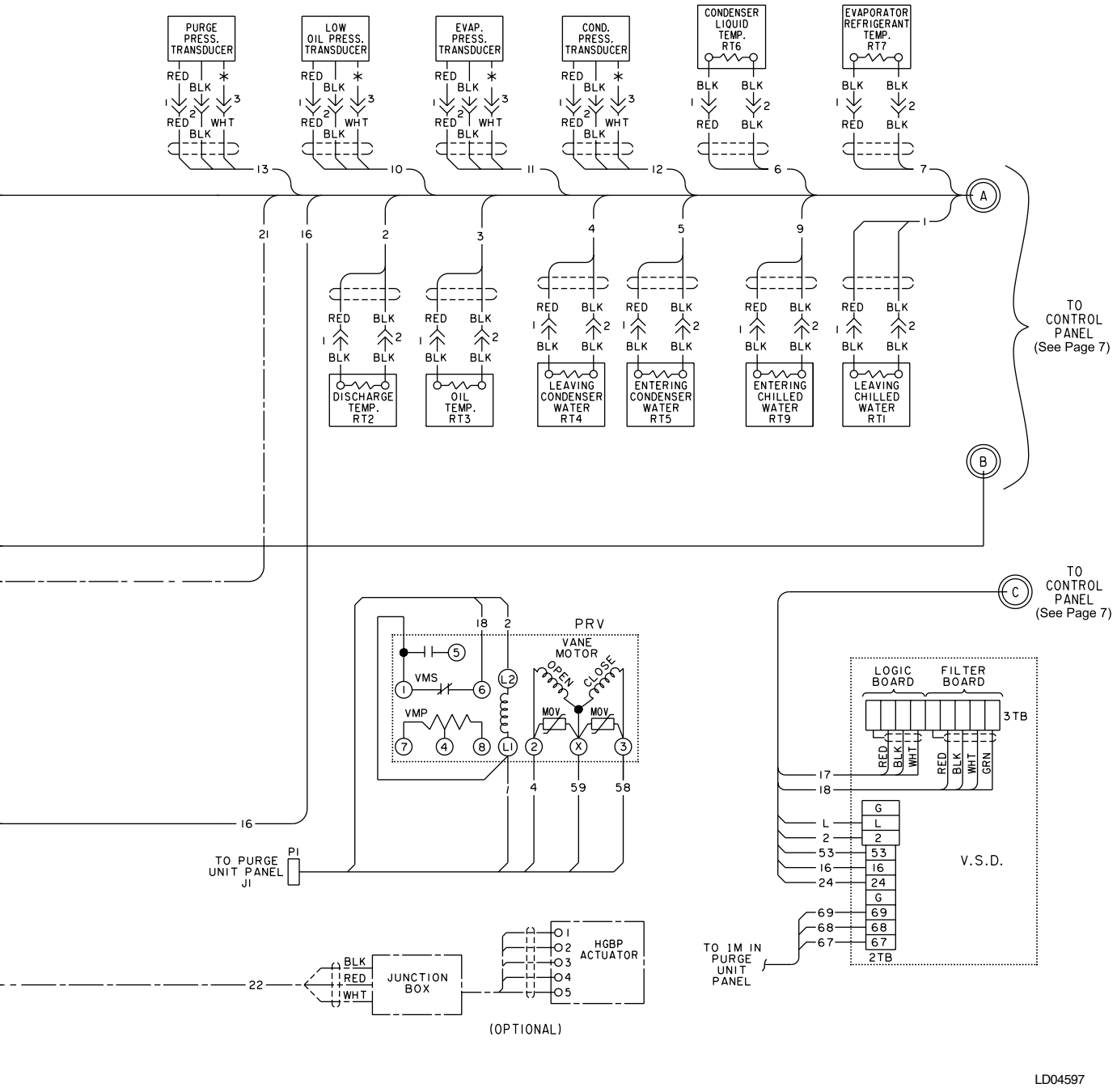



RIGHT SIDE WALL
WIRE ENTRY VIEW
302
303
305
306
309
307
313
J30
311
302A
303A
307A
313A
305A
306A
309A
P30
(SUPPLIED WITH
POWER SUPPLY)
311A
* POWER
SUPPLY
1A
2
L
N
GND
J1
309A
(313A)
+12V (+24V)
311A
-12V
313A
(309A)
+24V (+12V)
+24V (+12V)
307A
306A
305A
303A
302A
COM
COM
COM
COM
+5V
+5V
+5V
J2
* CONDOR PWR SUPPLY SHOWN.
NUMBERS IN PARENTHESIS
REPRESENT POWER ONE PWR SUPPLY
A
TO
MICRO BD.
J8
P31
313B
J6
306
313
COM
24V
J5
J4
J3
J10
031-01782
ADAPTIVE CAPACITY
CONTROL BOARD
J8
J9
J7
D
22
IT
IF
2D
120
VAC
24
VAC
5
162
I
LA
IFU
5A
22
L
2FU
15A
(HGBP OPTION)
TERMINATE 17 & 18
CABLE DRAINS
UNDER SCREW
B
C
RED
BLK
16 33 61 IC IB IE ID 29 164
16 33 61 I I 29 165 164 64 17
5 3 4 15 16A 24 25 53 IB I ID IA IF I L LA 2B 2 2D
5 3 4 15 16 24 25 53 I I I I L L L 2 2 2 2 TB6
KI8
(IR RELAY)
TB5
22
25
23
2
LT BLU
L
RED
G
GRN/YEL
154 155 156 157 164 36 35
GND
RED (J12)
BLK (J12)
305
310
308
302
J9
RED (J7)
BLK (J7)
304
301
P10
OPTIONAL
ANALOG
I/O BOARD
WHT
OPTIONAL
DIGITAL
I/O BOARD

LD04596

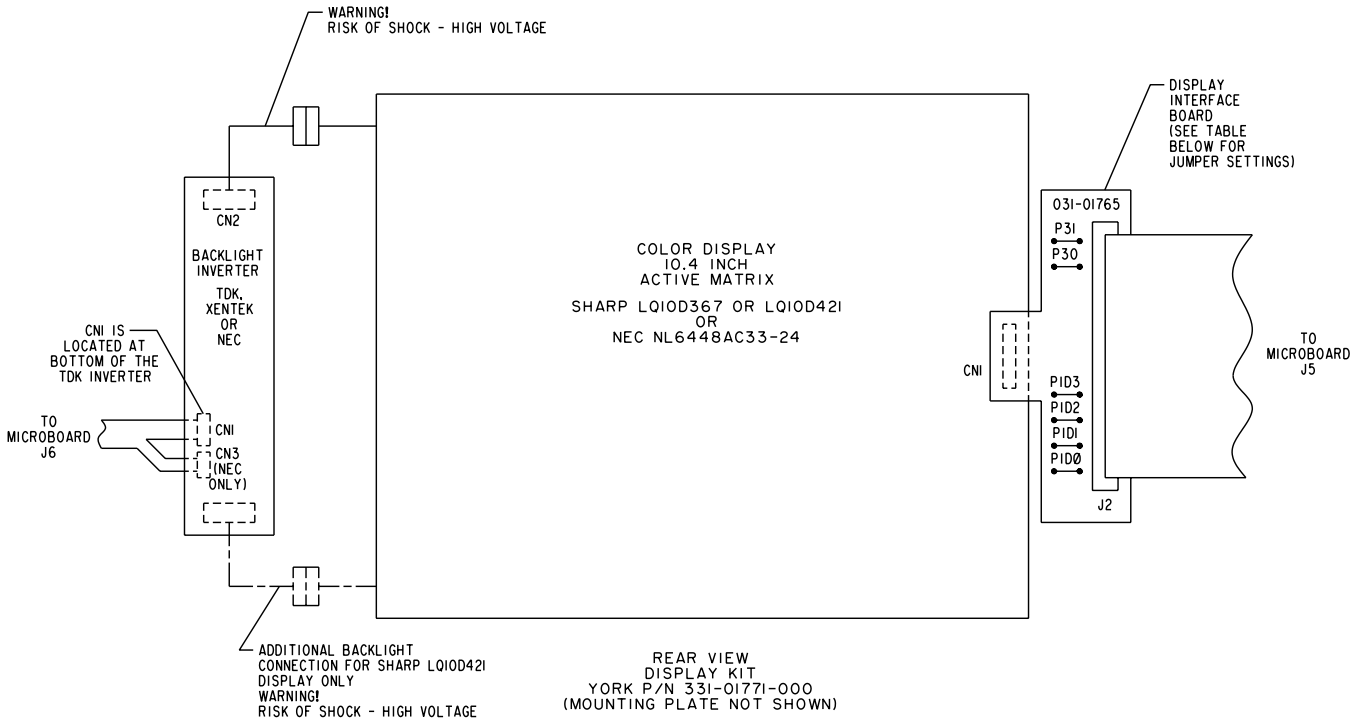
CONNECTION DIAGRAM (Cont'd)

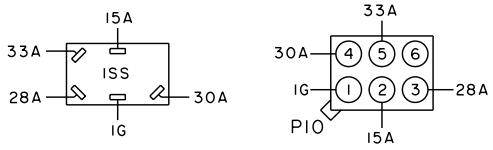



PURGE PRESS. TRANSDUCER
LOW OIL PRESS. TRANSDUCER
EVAP. PRESS. TRANSDUCER
COND. PRESS. TRANSDUCER
CONDENSER LIQUID TEMP. RT6
EVAPORATOR REFRIGERANT TEMP. RT7
DISCHARGE TEMP. RT2
OIL TEMP. RT3
LEAVING CONDENSER WATER RT4
ENTERING CONDENSER WATER RT5
ENTERING CHILLED WATER RT9
LEAVING CHILLED WATER RTI
TO CONTROL PANEL (See Page 7)
PRV
VANE MOTOR
OPEN
CLOSE
VMS
VMP
MOV
TO PURGE UNIT PANEL J1
P1
LOGIC BOARD
FILTER BOARD
3TB
V.S.D.
2TB
TO 1M IN PURGE UNIT PANEL
JUNCTION BOX
HGBP ACTUATOR
(OPTIONAL)

LD04597

INSIDE VIEW OF FRONT DOOR





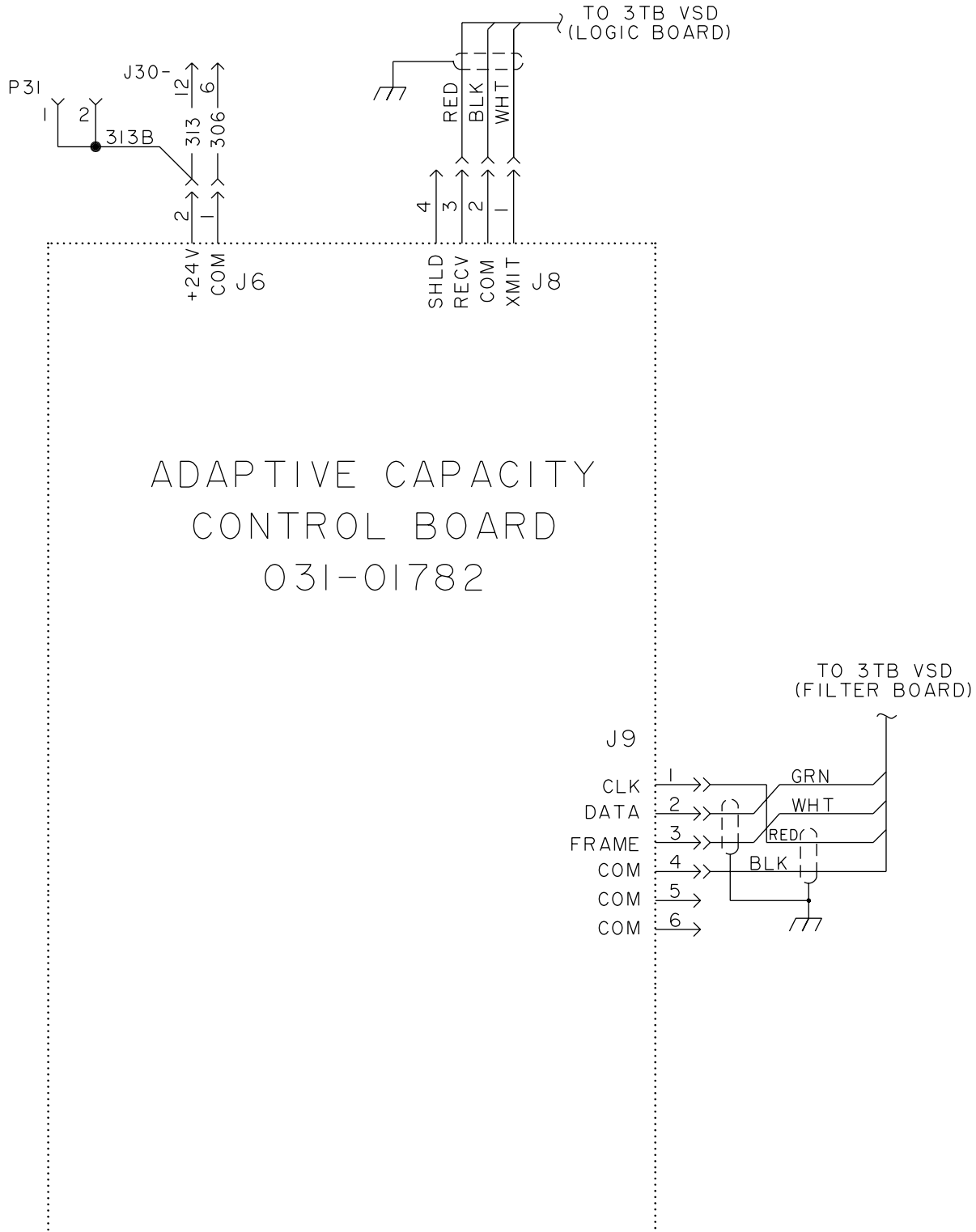
DISPLAY INTERFACE BOARD JUMPER SETTINGS

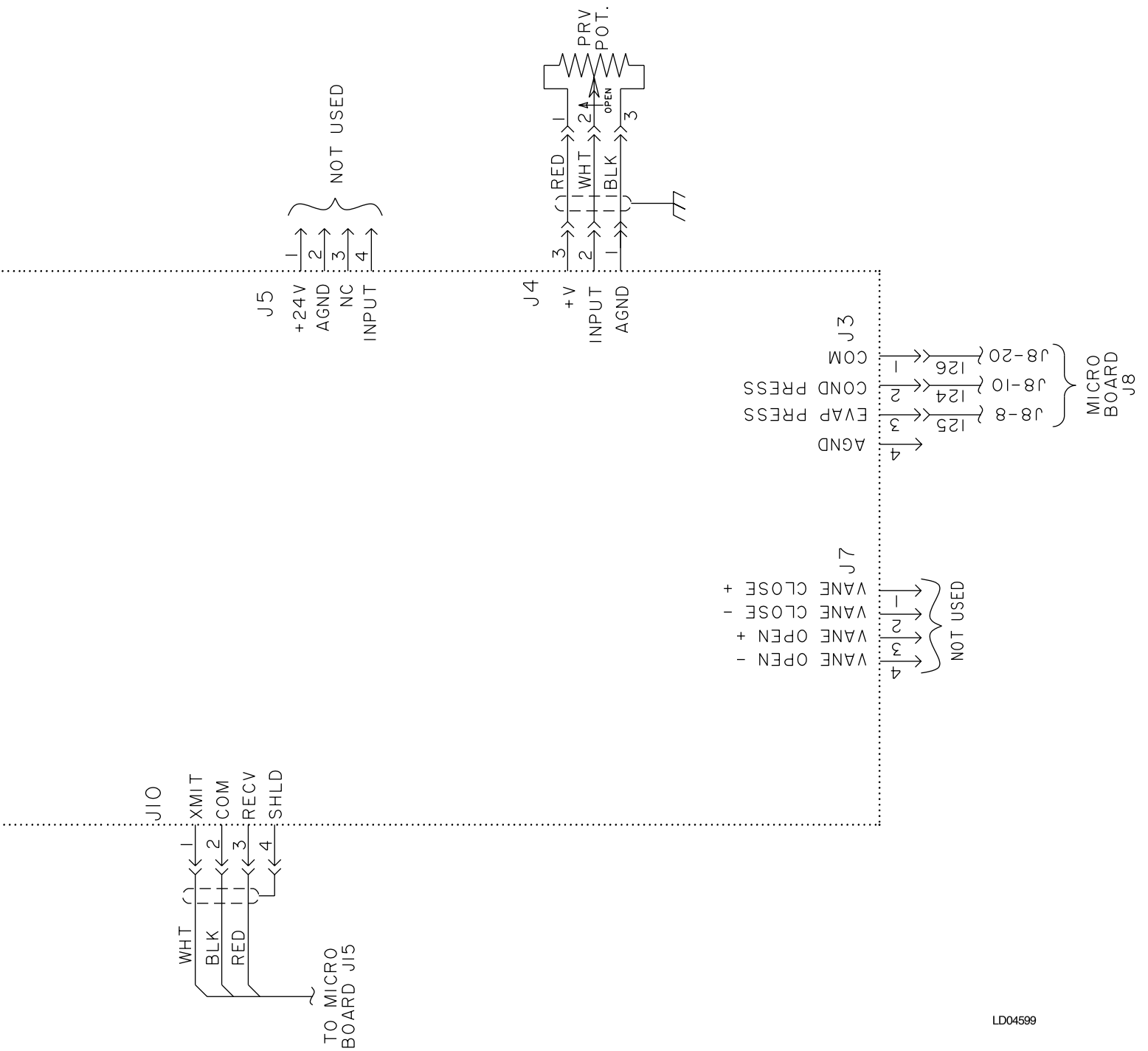
DISPLAY	P30	P31	PID3	PID2	PID1	PID0
SHARP LQ10D367	IN	IN	OUT	OUT	IN	OUT
SHARP LQ10D421	IN	IN	OUT	OUT	IN	OUT
NEC	OUT	OUT	OUT	OUT	OUT	IN

LD04598

OIL PUMP MOTOR		OIL PUMP STARTER OVERLOAD HEATERS						
COMPR	VOLTS-PH-HZ	FULL LOAD AMPS	MANUFACTURER	MANUFACTURER'S PART NO.	SETTING	TRIP AMPS	DUAL ELEMENT FUSE SIZE	PROTECTION
B,C,E	440-3-60	1.45	CUTLER HAMMER	H2005B-3	B.0	1.8	5	125
	460-3-60	1.45	CUTLER HAMMER	H2005B-3	B.0	1.8	5	125
	480-3-60	1.45	CUTLER HAMMER	H2005B-3	B.0	1.8	5	125
F	440-3-60	1.85	CUTLER HAMMER	H2006B-3	A.25	2.4	5	127
	460-3-60	1.85	CUTLER HAMMER	H2006B-3	A.25	2.4	5	127
	480-3-60	1.85	CUTLER HAMMER	H2006B-3	A.25	2.4	5	127
B,C,E,F	380-3-50	2.20	CUTLER HAMMER	H2006B-3	B.75	3.0	6	138
	400-3-50	2.20	CUTLER HAMMER	H2006B-3	B.75	3.0	6	138
	415-3-50	1.85	CUTLER HAMMER	H2006B-3	A.25	2.4	6	127

* – Oil pump motor supply fuses located in variable speed drive.


TO 3TB VSD
(LOGIC BOARD)
P31
J30-
1
2
313B
12
6
313
306
2
1
RED
BLK
WHT
4
3
2
1
+24V
COM
J6
SHLD
RECV
COM
XMIT
J8
ADAPTIVE CAPACITY
CONTROL BOARD
031-01782
TO 3TB VSD
(FILTER BOARD)
J9
CLK
DATA
FRAME
COM
COM
COM
1
2
3
4
5
6
GRN
WHT
RED
BLK


J5
+24V
AGND
NC
INPUT
NOT USED
J4
+V
INPUT
AGND
PRV
POT.
RED
WHT
BLK
OPEN
J3
COM
COND PRESS
EVAP PRESS
AGND
J8-20
J8-10
J8-8
126
124
125
MICRO
BOARD
J8
J7
VANE CLOSE +
VANE CLOSE -
VANE OPEN +
VANE OPEN -
NOT USED
J10
XMIT
COM
RECV
SHLD
WHT
BLK
RED
TO MICRO
BOARD J15
LD04599

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	PROGRAMMABLE PER OPERATOR'S MANUAL FORM 160.55-01 *		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
✓	✓	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	PROGRAMMABLE PER OPERATOR'S MANUAL FORM 160.55-01			
	✓	LWT	DEG.F/DEG.C				
✓	✓	LOT	DEG.F/DEG.C	71.0/21.7		55.0/12.8	
✓	✓	PTHP	PSIA/kPa	105/723		99/682 MANUAL RESET	

LD04600

* Function provided by condenser transducer

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Form 160.55-PW3 (799)
Supersedes: Nothing