

CPC TRC Quick Start

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Start-up Guide

Document No. 025-8120

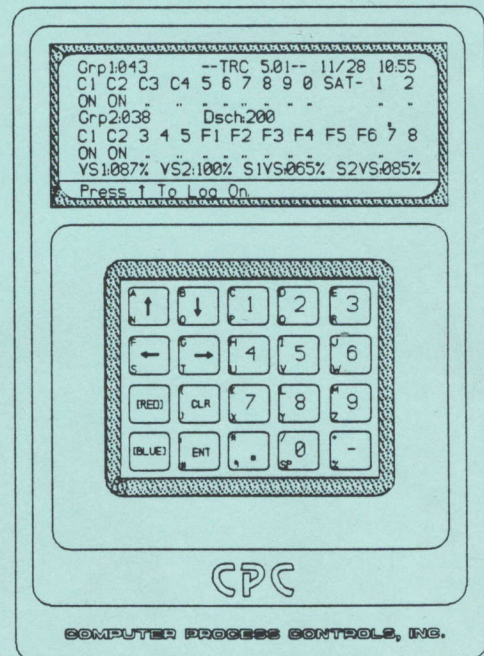
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Software Rev. 5.01 and up

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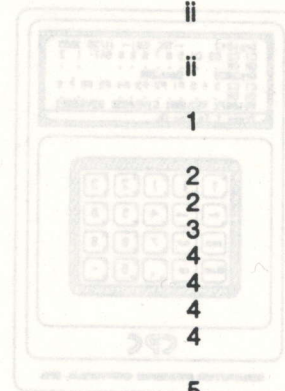
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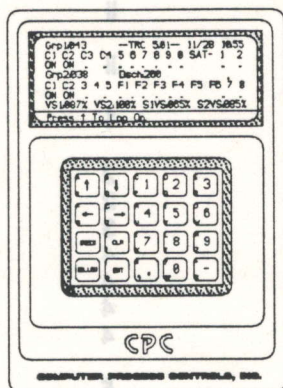
TRC

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What is the TRC



The TRC is a Total Rack Control primarily used for refrigeration rack applications. It controls suction pressure, discharge pressure, temperatures, defrost, oil pressure, and monitors other inputs, such as relay contacts, kw pulses, etc.

The TRC monitors pressure transducers, temperature sensors, and other inputs to compare against setpoints to control relay outputs for the purpose of maintaining the rack's operation within the setpoint limits. Any abnormal conditions are monitored to give alarms when conditions exceed pre-set alarm limits.

Through the relay outputs, the TRC controls compressors, valves, fans, defrost valves and contactors in response to monitored temperatures, pressures, time, and other inputs.

FEATURES

The TRC has many capabilities for controlling most any refrigeration system. Some of its features are listed here.

- Group 1 - up to 10 compressors (1 may be variable speed) .*
- Group 2 - up to 5 compressors (1 may be variable speed).*
- Satellite Compressor #1 (may be variable speed).*
- Satellite Compressor #2 (may be variable speed).*
- Variable Speed Compressor Control - up to 4 per rack, as listed above.*
- Oil, Suction Pressure, and Discharge Pressure Transducer Options.*
- Condenser Control - up to 8 Fans, Temperature or Pressure control.*
- Up to 48 additional Sensor inputs - digital, analog, or linear.*
- Defrost Control - up to 23 Circuits.*
- Remote communications with auto Dialing.*
- Historical Logging of Data.*
- Alarms and Notices - on site or remote.*
- Graphic Representation of Data.*
- Compatible with other CPC products.*

Introduction

This Quick Start Programming Guide is designed to make the set up of the TRC quick and simple. The installation should be completed prior to set-up; however, verify that the wiring is done in such a manner as described in this booklet for a "Typical Network".

Since all technical details are not included in this manual, refer to the Installation, Operating and Troubleshooting instructions, document number 025-8100, for detailed information.

1. Typical Network

What is a network? It is the communications link formed when the TRC is interconnected with its input and output boards. It is a single three wire cable that "loops" between boards as shown in Fig. 1. Notice that there is also a "Host" network which is the interconnection cable between TRC, TEC, TLC, and the 485 alarm box. The Input/Output board network is connected to the COM A plug on the TRC. The Host network is connected to the COM B plug on the TRC.

A good understanding of how the devices are connected on the network will help you to understand how to give each device its identification and consequently how to define and set-up each input and output. This is the key to getting started quickly with a minimum of effort. To aid you, Fig. 1 shows a typical network. Your network may differ in size and quantities, but by following the same logic as described for this typical one, Set-Up will be very similar. Note that each type of board is numbered 1-? on each Network.

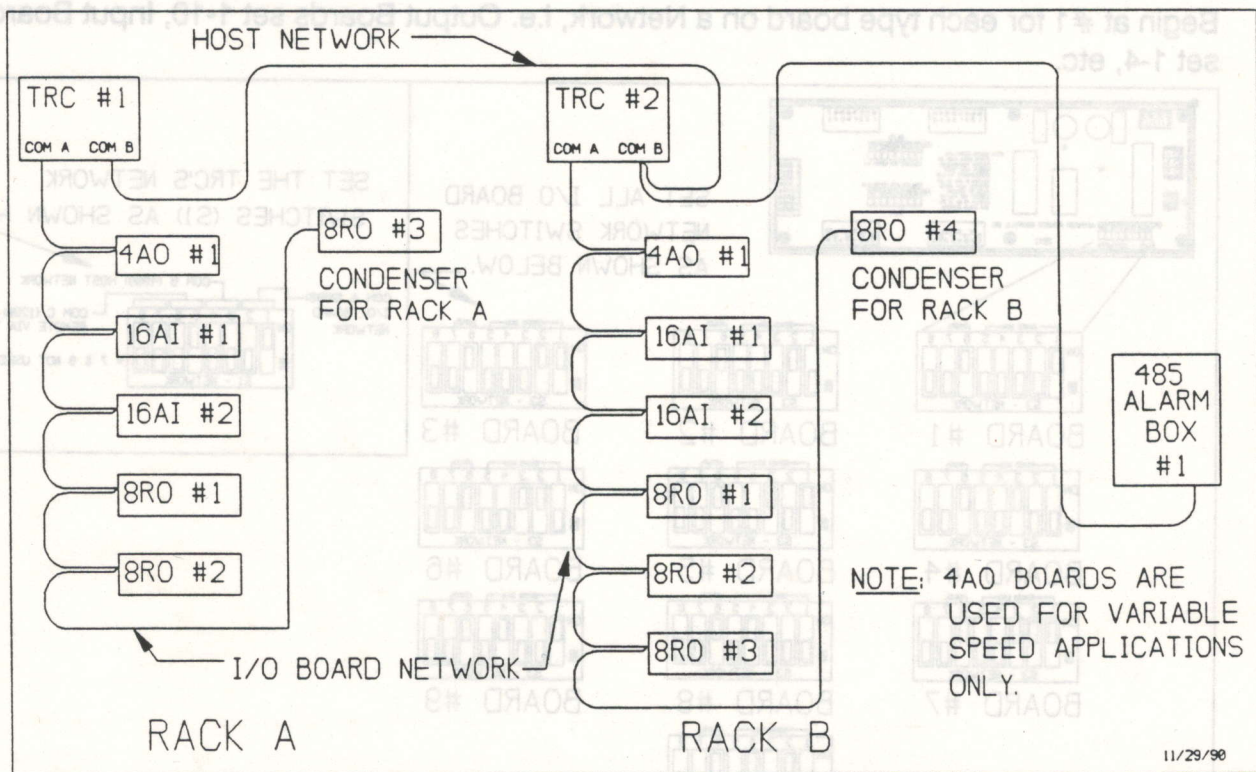


Fig. 1 - Typical Network With Alarm Box

2. STEP by STEP HARDWARE SETUP

After installation is complete and prior to turning on the power to the TRC it is necessary to take the following steps to set the hardware switches and jumpers. It is important that these steps be taken before any data is entered through the keyboard of the TRC.

STEP 1. Set Network switches.

STEP 2. Set Fail Safe switches and NO/NC Relay jumpers on 8RO Boards.

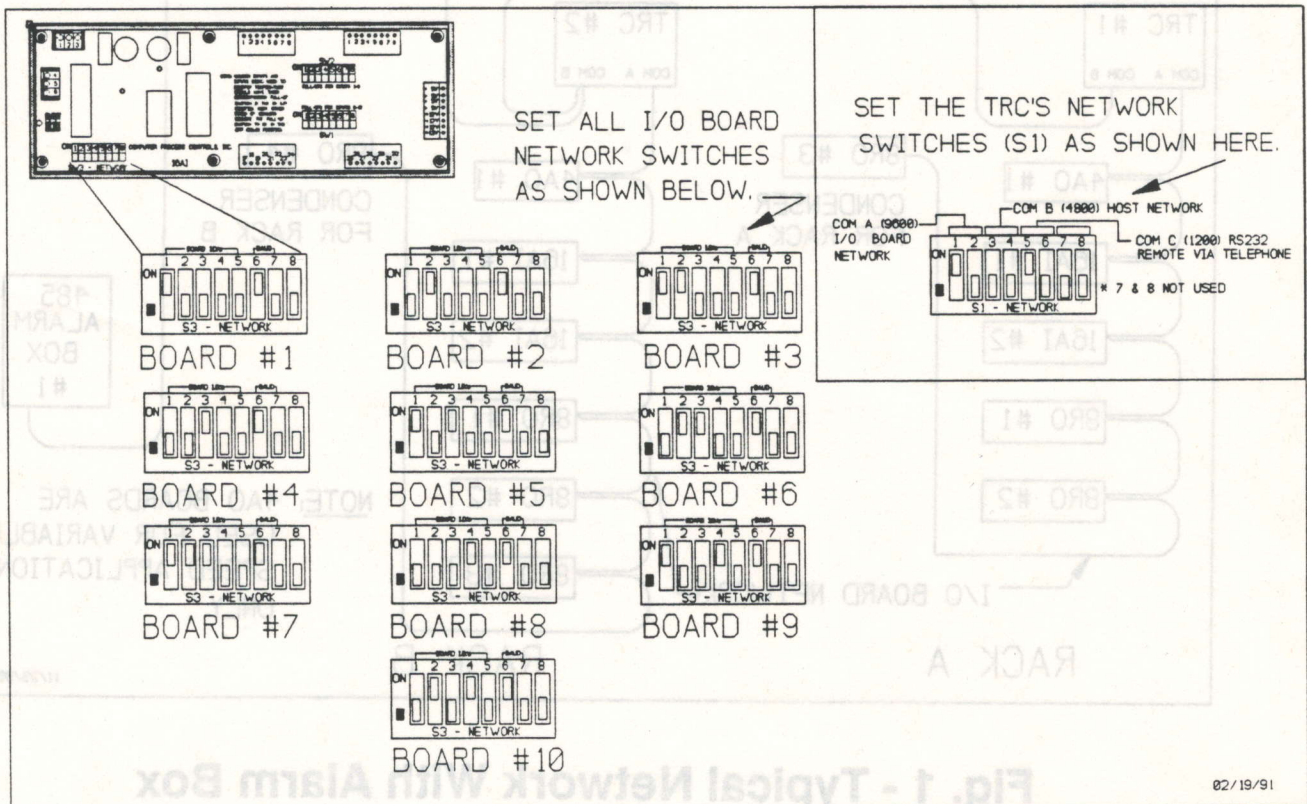
STEP 3. Set Terminating Resistance jumpers on each board.

STEP 4. Set Input switches for 16AIs.

STEP 5. Set Voltage jumpers on TRC controller and 485A Alarm Box

STEP 6. Set 485A alarm box mode switch SW 3.

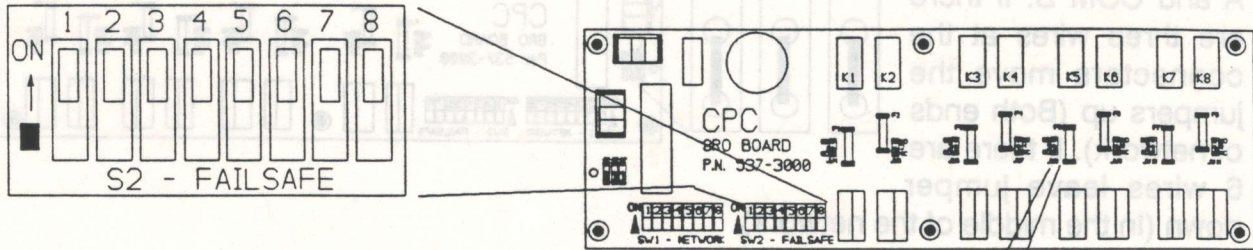
STEP 1. SET NETWORK SWITCHES - On all boards, the NETWORK switch must be set to identify the board numbers and baud rate as shown in Fig. 2 below. Begin at #1 for each type board on a Network, i.e. Output Boards set 1-10, Input Boards set 1-4, etc.



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For more than 10 Input or Output Boards refer to the main technical manual.

STEP 2. Set FAIL SAFE SWITCHES & NO/NC RELAY JUMPERS - for all 8RO boards.



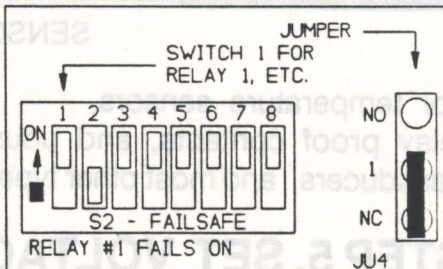
These jumpers and switches must be set for the type application as shown in the examples below.

EXAMPLES:

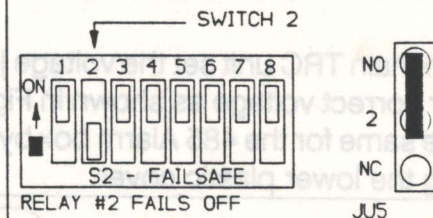
SET FAILSAFE SWITCHES AND NO/NC JUMPERS

Note: Dip switches 1-8 on S2 are for 8 relays.

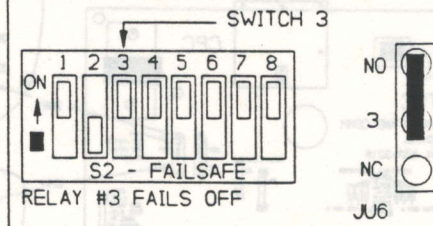
1. For compressors, fans, liquid line solenoids, etc. set the FAILSAFE switch and NO/NC Jumper as shown to the right for Relay #1. Most relays will be set this way.



2. For defrost heaters, defrost valves etc., set the FAILSAFE switch and NO/NC relay jumper as shown to the right for Relay #2.

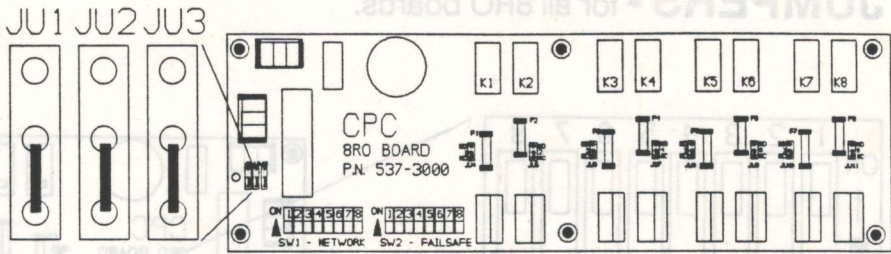


3. For unloaders set the FAILSAFE switch and NO/NC Relay jumper as shown to the right for Relay #3.

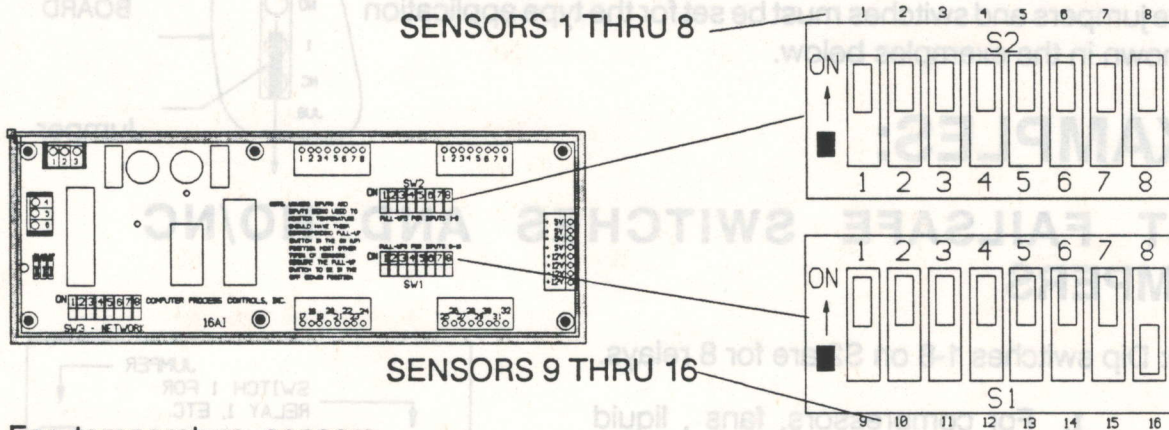


STEP 3. Set Terminating Resistance Jumpers.

For all boards, TRCs, 485A, etc. for both COM A and COM B: If there are three wires at the connectors move the jumpers up (Both ends of network). If there are 6 wires leave jumper down (In the middle of the network).



STEP 4. SET INPUT SWITCHES for 16AI Boards



For temperature sensors, relay proof contacts, and unused inputs the switch should be **UP**. For pressure transducers, and most other types of sensors the switch should be in the **DOWN** position.

STEP 5. SET VOLTAGE JUMPERS

On main TRC unit set the voltage jumpers for correct voltage as shown in Fig. 3. Do the same for the 485 Alarm box by removing the lower plastic cover.

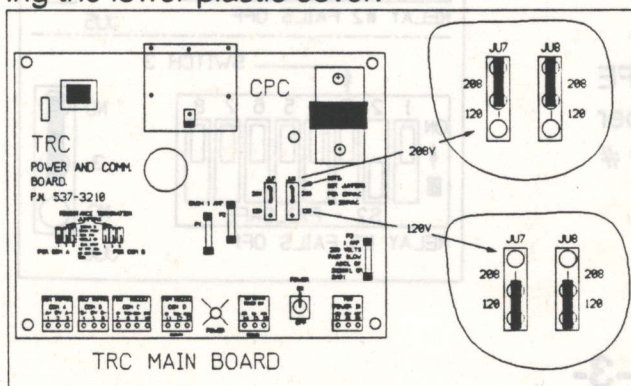
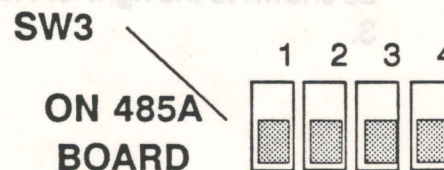


Fig. 3 - Voltage Jumpers

STEP 6. SET 485A ModeSwitch.

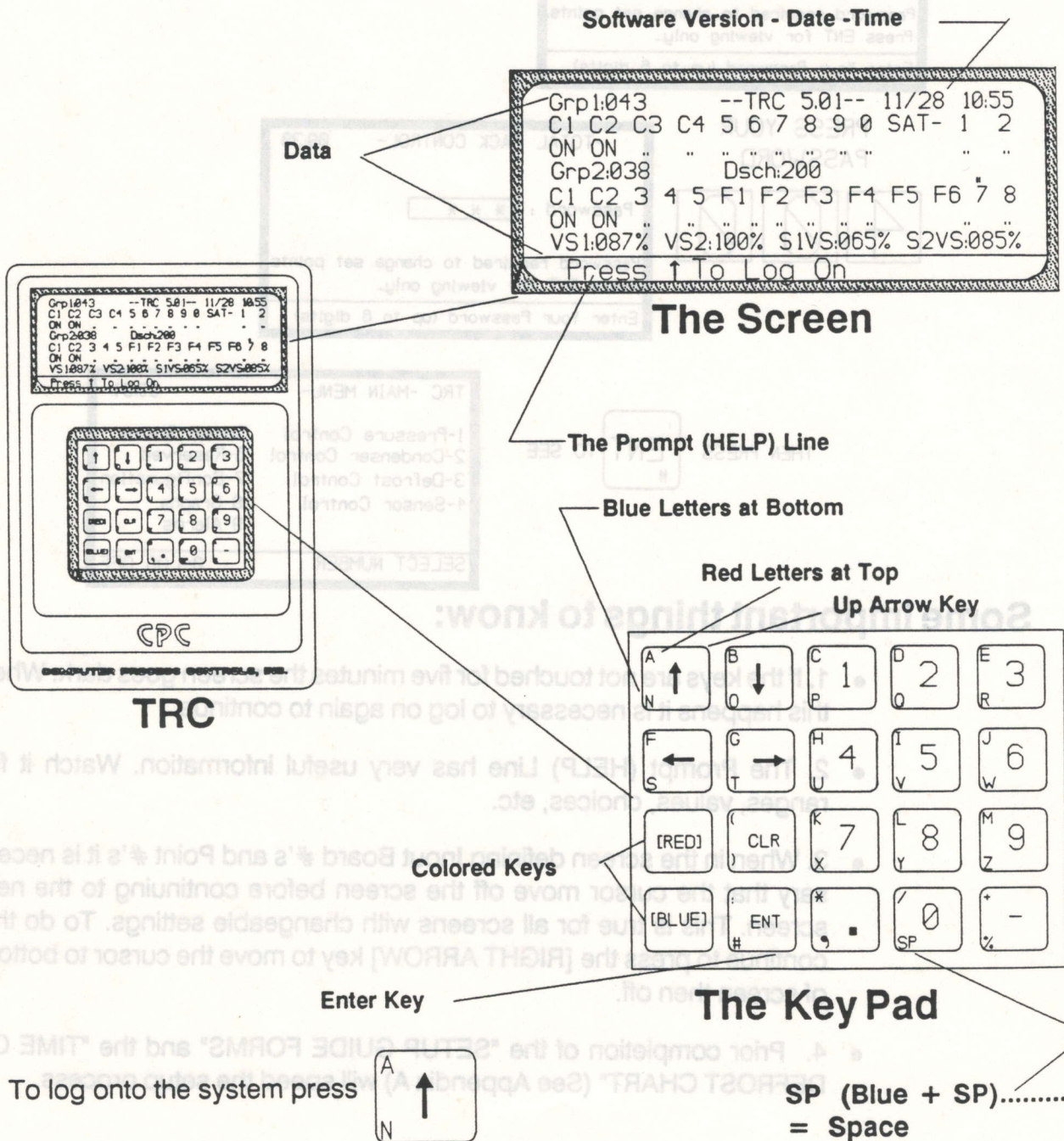
Set SW3 as shown: S1 - ON FOR PRINTER OFF FOR NO PRINTER, AND S2 - ON FOR AN AUDIBLE ALARM USE OR OFF FOR NO AUDIBLE ALARM..



S3 & S4 NOT USED.

3. Logging On and Key Pad / Screen

Power up the TRC by turning on the power switch in the lower right hand corner of the Power Interface Board. You should see the CPC logo, then a screen like the one shown below.



The Screen prompts you to "Enter Your Password". Use the factory password [400] which allows programming of the TRC. If the password has been changed determine what it is and use it. Then press [ENTER]. The Main Menu is displayed.

-TOTAL RACK CONTROL- 09:30

Password :

Password required to change set points.
Press ENT for viewing only..

Enter Your Password (up to 6 digits)

PRESS YOUR
PASSWORD

4 0 0

-TOTAL RACK CONTROL- 09:30

Password :

Password required to change set points.
Press ENT for viewing only..

Enter Your Password (up to 6 digits)

THEN PRESS

ENT
#

TO SEE

TRC -MAIN MENU- 09:31

1-Pressure Control	5-Main Status
2-Condenser Control	6-Reserved
3-Defrost Control	7-Configuration
4-Sensor Control	8-Graphs
	9-Alarms

SELECT NUMBER 0-LOG OFF

Some important things to know:

- 1. If the keys are not touched for five minutes the screen goes dark. When this happens it is necessary to log on again to continue.
- 2. The Prompt (HELP) Line has very useful information. Watch it for ranges, values, choices, etc.
- 3. When in the screen defining Input Board #'s and Point #'s it is necessary that the cursor move off the screen before continuing to the next screen. This is true for all screens with changeable settings. To do this continue to press the [RIGHT ARROW] key to move the cursor to bottom of screen then off.
- 4. Prior completion of the "SETUP GUIDE FORMS" and the "TIME OF DEFROST CHART" (See Appendix A) will speed the setup process.

4. INPUT/OUTPUT Board Setup

To identify the number of I/O boards on the Network, each TRC must be told how many 8ROs, 16AIs and 4AOs it has. To do this go to the Configuration menu and press [7].

```

TRC -CONFIGURATION-          10:07
1-Input Definition           5-Xducer Setup
2-Output Definition          6-Host Network
3-System Information         7-I/O Board Setup
4-Remote Communication
SELECT NUMBER                0=MAIN
  
```

PRESS

```

TRC -I/O BOARD MENU-        11:08
1- ONLINE Status            3-Reset
2-Set Device #'s
                                0=Config Menu
  
```

Press

from the I/O BOARD MENU to set Device # (in this case quantities). For each TRC tell it how many of each type board is connected to its I/O BOARD NETWORK. For example in our Typical Network the TRC - 2 is shown here. Then press [ENTER] to return to the I/O Board Menu.

```

I/O BOARD DEVICE NUMBERS    11:10
Number of 8RO Boards #4 : 4
Number of 16AI Boards #2 : 2
Number of 4AO Boards #1 : 1
  
```

```

Network State : ON
Number Off line : 0
      1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
8ROs  1 1 1 1
16AIs 1 1
4AOs  1
  
```

From the I/O BOARD MENU press [3] and then [2] for "ON" to reset the network to "ON". To check the I/O Board OnLine Status Press [1] from the I/O Board Network Menu and observe if all boards are on line, See it at left here for TRC - 2 in the example. "1" is on line, "." is off line, and a space is for none.

5. HOST NETWORK

Each TRC communicates with its Input/Output boards through an I/O Board Network. The TRCs and other devices communicate with each other through the Host Network. Like the Input and Output boards, the TRCs, and other devices on the Host Network must have Identifications. The TRC does not have a NETWORK Switch for setting the board # like 8ROs, 16AIs and 4AOs. Its identification is done through the HOST NETWORK MENU. To do this go to the CONFIGURATION MENU on TRC 1 and press [6] as shown on the next page.

TRC -CONFIGURATION- 10:59

1-Input Definition	5-Xducer Setup
2-Output Definition	6-Host Network
3-System Information	7-I/O Board Setup
4-Remote Communication	

SELECT NUMBER 0=MAIN

PRESS

J
6
W

HOST NETWORK MENU- 11:00

1- ONLINE Status	3-Reset
2-Set Device #'s	

0=Config Menu

Press [2] to set device #'s. If you are at TRC 1 press [1] and [ENT]. Continue this process until all TRCs have been numbered 1, 2, 3, etc. If there are just 2 TRCs then the remainder will be assigned the number "0". The next screen asks for the Device # for the 485 Alarm Box as shown below.

HOST BUS DEVICE NUMBERS 11:01

This Controller Device # 1 : 1

Number of TRCs # 1 : 2
Number of TECs # 1 : 0
Number of TLCs # 1 : 0
Number of 485As # 1 : 1

Enter Total # of Controllers on Bus

HOST BUS DEVICE NUMBERS 11:01

This Controller Device # 1 : 1

485 Alarm Box Device # 1 : 1

In the TYPICAL NETWORK example shown earlier we have 2 TRCs and 1 485A on the Host Network. The 485 Alarm Box is always placed at the end of the network and being only 1 it is always identified as #1. So press [1] and [ENT] to return to the HOST NETWORK MENU. If the 485 Alarm option had not been used, then the Device # would be entered as "0".

• a. Reset -

From the HOST NETWORK MENU Press [3] for reset. Then press [2] to turn the network ON, then [ENTER] to return to HOST NETWORK MENU.

HOST NETWORK 11:04

1) OFF 2) Reset (ON)

Network Reset (ON)

• b. ONLINE Status -

To check if the HOST NETWORK has all of the TRCs, etc. properly connected to the network, go to the HOST NETWORK MENU and press [1] as shown on the next page.

HOST NETWORK MENU- 11:00 1- ONLINE Status 3-Reset 2-Set Device #'s 0-Config Menu	PRESS C 1 P	Network State : OK Number Off line : 0 1 2 3 4 5 6 7 8 TRCs 1 1 TECs 0 TLCs 0 485As 1
---	---	---

All devices on the Host Network, if properly wired and setup, will show a status of "1" for each one. If offline then a "dot" would show as the status. A space indicates that there is none assigned to that position. The TRC you are logged on to will not show. Press [ENTER] to get back to I/O Board Network Menu. Then [1] to define the Input Board and Point #'s.

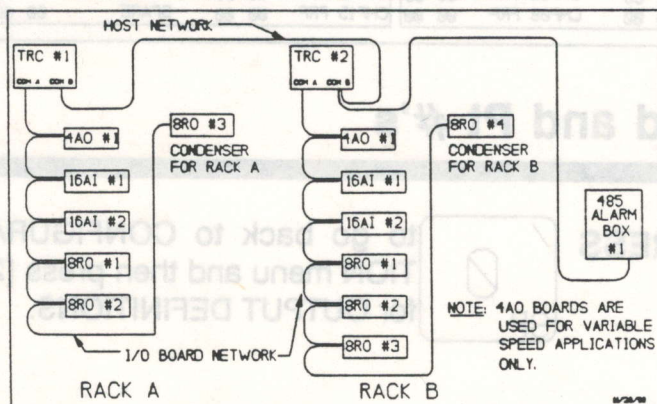
Note: All other items on the HOST NETWORK MENU are factory preset and require no action for this Quick Start manual.

6. Input Definitions: Bd and Pt #'s

It will be most helpful if the **SETUP GUIDE FORMS** are completed prior to proceeding further. More than likely these forms were used during installation to show the electrician the assignment of all transducers and other sensors. Use these forms now to enter the location of sensor inputs.

Now that we have the TRC "talking" to the boards we will need to tell it what is connected to the boards and where. We will use the Typical Network example for this discussion. Using that example we will program TRC Number 2. It has two 16AIs. From the main menu press [7] to go to the configuration menu, then press [1] for the Input Definition screen.

TRC -CONFIGURATION- 09:59 1-Input Definition 5-Xducer Setup 2-Output Definition 6-Host Network 3-System Information 7-I/O Board Setup 4-Remote Communication SELECT NUMBER 0-MAIN	PRESS C 1 P	TRC -INPUT DEFINITIONS- 10:00 Input Bd Pt Input Bd Pt G1 SUC PRS 00 00 G1 SUC Tmp 00 00 DSCH PRESS 00 00 DSCH TEMP 00 00 SAT1 P/T 00 00 SAT2 P/T 00 00 SPARE 00 00 DEFR INHIB 00 00 ↑-PREV↓-NEXT →-SET-DATA 0-MENU
--	---	--



In this Typical Network the suction pressure transducer for Rack B is connected to the 16AI Board #1 on the 8th input (point). So, we press [RIGHT ARROW] to enter the screen on the first item - G1 SUC PRS. (**NOTE:** the cursor is at Bd #, see next page.)

Here we enter [1] for board #. and press [RIGHT ARROW] to move cursor to Pt and enter [8] as the point.

Next press [RIGHT ARROW] to go to G1 SUC TMP and the screen looks like this with cursor at its Bd #. Continue to enter Board #'s and Point #'s until all devices on the network have been so identified for both TRCs.

Note:

1. Maximum number of 16AI boards allowed is 8 per TRC.

3. Maximum number of points is 16 per board.

In the Typical Network we have sample identification for the first twelve screens as shown below. There are 25 screens in all covering all of the possible inputs necessary for total rack control.

INPUT DEFINITIONS																	
Input	Bd	Pt	Input	Bd	Pt	Input	Bd	Pt	Input	Bd	Pt	Input	Bd	Pt	Input	Bd	Pt
G1 SUC PRS	01	08	G1 SUC TMP	01	07	G1 CASE 1	00	00	G1 CASE 2	00	00	COND INLET	01	13	COND OUTLET	01	14
DSCH PRESS	01	01	DSCH TEMP	01	02	G1 CASE 3	01	06	G1 CASE 4	00	00	SPLIT STAT	01	15	RECLM STAT	01	16
SAT1 P/T	01	03	SAT2 P/T	01	04	PHASE LOSS	01	09	SPARE	01	10	FAN1 PROOF	00	00	FAN2 PROOF	00	00
SPARE	00	00	DEFR INHIB	01	05	SPARE	01	11	SPARE	01	12	FAN3 PROOF	00	00	FAN4 PROOF	00	00
FAN5 PROOF	00	00	FAN6 PROOF	00	08	G2 SUC PRS	00	00	G2 SUC TMP	00	08	DEF01 TERM	00	08	DEF02 TERM	00	08
FAN7 PROOF	01	01	FAN8 PROOF	00	00	G2 CASE1	00	00	G2 CASE 2	00	00	DEF03 TERM	00	00	DEF04 TERM	00	00
SUCT SETUP	00	00	SPARE	00	00	G2 CASE 3	00	00	G2 CASE 4	00	00	DEF05 TERM	00	00	DEF06 TERM	00	00
SPARE	02	01	SPARE	02	02	SPARE	00	00	SPARE	00	00	DEF07 TERM	00	00	DEF08 TERM	00	00
DEF09 TERM	01	08	DEF10 TERM	00	00	DEF17 TERM	01	08	DEF18 TERM	00	00	OIL PRES01	02	03	OIL PRES02	02	04
DEF11 TERM	01	01	DEF12 TERM	00	00	DEF19 TERM	01	01	DEF20 TERM	00	00	OIL PRES03	02	05	OIL PRES04	00	00
DEF13 TERM	00	00	DEF14 TERM	00	00	DEF21 TERM	00	00	DEF22 TERM	00	00	OIL PRES05	00	00	OIL PRES06	00	00
DEF15 TERM	01	03	DEF16 TERM	00	00	DEF23 TERM	01	03	SPARE	00	00	OIL PRES07	00	00	OIL PRES08	00	00
OIL PRES09	00	00	OIL PRES10	00	00	CMP01 PRF	00	00	CMP02 PRF	00	00	CMP09 PRF	00	00	CMP10 PRF	00	00
OIL PRES11	00	00	OIL PRES12	00	00	CMP03 PRF	00	00	CMP04 PRF	00	00	CMP11 PRF	00	00	CMP12 PRF	00	00
OIL PRES13	00	00	OIL PRESS14	00	00	CMP05 PRF	00	00	CMP06 PRF	00	00	CMP13 PRF	00	00	CMP14 PRF	00	00
OIL PRESS15	00	00	SPARE	00	00	CMP07 PRF	00	00	CMP08 PRF	00	00	CMP15 PRF	00	00	SPARE	00	00

7. Output Definitions: Bd and Pt #'s

From the Input Definitions screen

PRESS



to go back to CONFIGURATION menu and then press [2] for OUTPUT DEFINITIONS.

TRC -CONFIGURATION-		10:59
1-Input Definition	5-Xducer Setup	
2-Output Definition	6-Host Network	
3-System Information	7-I/O Board Setup	
4-Remote Communication		
SELECT NUMBER		0-MAIN

then
press

2

TRC -OUTPUT DEFINITIONS-						11:02
Output	Bd	Pt	Output	Bd	Pt	
COMP #01	00	00	COMP #02	00	00	
COMP #03	00	00	COMP #04	00	00	
COMP #05	00	00	COMP #06	00	00	
COMP #07	00	00	COMP #08	00	00	
↑-PREV↓-NEXT →-SET-DATA						0-MENU

PRESS



to enter the OUTPUT DEFINITIONS screen. As in Section 4, the cursor is now on COMP #01's Bd #. Assign the Bd #s and Pt #s in the same manner as illustrated in Section 6 for Input Bd and Pt #s. There are 19 screens covering all of the output devices normally found on the typical rack.

Note: Maximum number of 8RO boards allowed is 16 per TRC and 4AO boards is 1 per TRC.

You are almost there! Most of the things you have done so far will not have to be changed unless the system is modified. What remains is the setup and setpoints for compressors, condenser fans, defrost, and sensors to match your application. We will first enter the setup and setpoints for compressors.

8. Compressor Control

• a. Set Up - Compressor Groups 1 and 2

Most of the applications are for parallel compressors, so that will be done first. As prompted by the help line press [0] to return to the main menu.

From the Main Menu Press [1] Pressure Control.

TRC -MAIN MENU-		11:48
1-Pressure Control	5-Main Status	
2-Condenser Control	6-Logs	
3-Defrost Control	7-Configuration	
4-Sensor Control	8-Graphs	
	9-Alarms	
SELECT NUMBER		0=LOG OFF

1

TRC -PRESSURE MENU-		11:49
1-Status	5-Bypass	
2-Setpoints	6-Set-up	
3-Alarms	7-Strategy	
4-Logs		
SELECT NUMBER		0-MAIN

We will first tell the TRC what kind of Rack we have by going to Pressure Menu item #6 Set-up. The first screen, shown on the next page, asks us some questions about the general operation of the system. So press [6] for Set-up.

The Pressure Set-up Menu

```

TRC -PRESSURE SETUP- 09:42
Defr - Force Comp On : Y Phase: Y
      Lead Circuit No.: 01
      Inhibit Float   : Y
      Float Delay Time: 10m
      Run Comp During Reclaim: Y
      One Comp Remain On Grp1: N Grp2: N
↑=PREV↓=NEXT →=SET-DATA 0=MAIN

```

Press [RIGHT ARROW] to move cursor into the screen. First menu item asks the question, "Do you want to force a compressor to run during a defrost period?" (Y)es or (N)o? Many hot gas users like to assure that at least one compressor is running. Next, Phase Loss protection, do you have a 3-phase monitor connected to the TRC? (Y)es or (N)o?

For all menu items watch the help line for possible choices. Next, if a temperature sensor is located in a line up to auto adjust pressure set points (floating set point control), you need to tell the TRC which it is. The next is related. If you do have a temperature sensor to float pressure set points, do you want to prevent the set point from changing during defrost? (Y)es or (N)o? Normally the answer is yes. The float delay time should be left at 10 minutes for normal applications. The next item "Run Comp During Reclaim:" is applicable if reclaim status is wired to an input. If so leave "Y" in, or press [BLUE] [Y]; otherwise don't worry about this entry. For the next item select "Y" if you want to force at least one compressor to run at all times for compressor group #1. The last item is the same as the next to last except it is for compressor group #2. Select "Y" if you wish to force at least one compressor to run all the time, otherwise Select "N".

To enter the next screen press [DOWN ARROW].

This brings us to the first compressor set up screen for compressor group 1. Press [RIGHT ARROW] to enter the screen on the first column of "Type Comp". Follow the prompts on the help line to tell the TRC the compressor type for each position. It may be [C], [V], or clear with [X]. (C)OMP, (V)S, OR (X)CLEAR?

```

TRC -PRESSURE SETUP- GROUP 1 09:42
Type Comp  C01 C02 C03 C04 .05
Run Time    00000 00000 00000 00000 00000
Oil Sens.   NONE  NONE  NONE  NONE  NONE
Oil Press   00.0  00.0  00.0  00.0  00.0
H. Power    015  008  008  000  000
Proof       NO   NO   NO   NO   NO
↑=PREV↓=NEXT →=SET-DATA 0=MAIN

```

Only the first compressor may be variable speed. As shown on the help line others have these choices: (C)omp (regular compressor), (U)nldr (compressor unloader stage), or (X)CLEAR (if no compressor at this position use clear). The first screen has the first 5 compressors of group 1. The next screen has compressors 6 through 10 of group 1. The next and last screen has the five compressors in group 2, 11 - 15. Like in Group 1, only the first compressor in group 2 can be variable speed. When a group does not have the maximum number of compressors the remaining ones must be cleared by pressing [X]. When a compressor is cleared you will note that the compressor number is preceded by a period instead of a "V", "C", or "U" (for example ".05").

For the remaining items on these screens observe the help line for choices (see next page).

Examples of choices shown are as follows:

Run Time [0] clears run time.

Oil Sens. [P] for an oil pressure transducer input.

[C] for a contact closure, such as oil safety switch or relay.

[O] for a contact open.

[N] for none.

Oil Press

This is the differential between suction manifold pressure and oil pump pressure. If you are using a transducer, set at the desired point as prompted in the range of "0.00 - 99.9". It is suggested a setting of 09.0 be used. If no transducer is used set at 00.0.

H. Power

Tell the TRC the horsepower for each compressor. The help line shows a range of 0-999. Since there are no decimals on this screen round off the horsepower to the next whole number. For example for a 7 1/2 H.P. compressor use 8. For compressors with unloaders use Type [C] for the 1st stage (compressor unloaded to lowest stage). For the higher capacity stages Type [U] for unloaders should be used. The horsepower you enter for an unloader should be for the contribution of the unloader only. For example a 10 H.P. compressor with 50% unloader should be entered as a 5HP compressor and 5HP unloader.

Proof

Yes or No? Tell the TRC if you have connected a compressor run proof, such as a current sensing relay or other device to tell if the compressor is in fact running.

• b. Set Up - Satellite Compressors -

From the main menu press [1] for pressure control. From the pressure menu press [2] for setpoints. From here press [DOWN ARROW] until the last page page (8th page) SATELLITE SETUP is reached.

The type can be either variable speed or single speed compressor. The satellite can be controlled by temperature or pressure. The screen shows the various menu items that need to be set up. Press [RIGHT ARROW] to enter cursor into screen.

TRC -SATELLITE SETUP-		09:14
Type	: 1	2
Control By	: ---	---
CutIn	: 024	024
CutOut	: 020	020
Delay	: 010s	010s
Run Time	: 00000	00000
↑-PREV		→-SET-DATA 0-MAIN

The cursor is on menu items for satellite 1 and 2 in this order:

Type: (C)OMP (V)S, Compressor or variable speed compressor?

Control By: (T)EMP (P)RESS (C)LEAR, Temperature, Pressure, or Clear?

Cut In: This is the setpoint at which the compressor will turn on. The range for temperature is -50°F to 270°F and 00.0psi to 99.9psi for pressure.

Cut Out: This is the setpoint at which the compressor will turn off. The range for temperature is -50°F to 270°F and 00.0psi to 99.9psi for pressure.

Delay: Delays the starting of compressor. Range allowed is 0-249 seconds.

Run Time: Show the runtime in hours. You may clear this by pressing [0].

This concludes the set up program. Now we are ready to enter the Setpoints. Refer to your SET UP GUIDE FORMS.

• c. Pressure Setpoints - Groups 1 and 2 -

Return to the main menu and press [1] for Pressure Control. Then press [2] for Setpoints.

TRC -PRESSURE MENU- 09:07	
1-Status	5-Bypass
2-Setpoints	6-Set-up
3-Alarms	7-Strategy
4-Logs	
SELECT NUMBER 0=MAIN	

PRESS

2

TRC -PRESSURE SETPOINTS- 09:11			
	Group 1	Group 2	Discharge
	DISABLED		
Setpoint :	22.0	22.0	Trip :350
On Delay :	030s	030s	Delay:005s
Off Delay:	010s	010s	Reset: 50
Unl Delay:	005s	005s	
↑-PREV↓-NEXT →-SET-DATA			0=MAIN

Press [RIGHT ARROW] to enter the screen field and enable or disable Group 2. Continue pressing [RIGHT ARROW] to move the cursor to suction and discharge pressure and time delay setpoints. Enter the desirable settings as pre-recorded on your Setup Forms. Observe the prompt bar at bottom of screen for allowable ranges. Continue until the cursor

is off the screen; then press [DOWN ARROW] to advance to the next screen "GRP1 FLOATING SUCTION SETPOINT". Continue by pressing [RIGHT ARROW] to enter all of the SET POINTS for this screen. Move the cursor off the screen then press [DOWN ARROW] for "GRP1 VARIABLE SPEED SETPOINTS". Press [RIGHT ARROW] to enter cursor onto screen and enter the set points for Group 1's Variable Speed compressor if there is one. Continue in this manner for group 1 and 2 setpoints.

```
TRC -GRP1 FLOATING SUCTION SETP- 9:11
Float On/Off: OFF
Target Temperature : 010
Using: T1 of T1:Y T2:N T3:N T4:N
Max. Suction Pressure : 45.0
Min. Suction Pressure : 39.0
Float Interval : 15m
↑=PREV↓=NEXT →=SET-DATA 0=MAIN
```

```
TRC -GRP1 VAR.SPEED SETPOINTS- 09:12
Min. Speed: 0900 rpm Max. Speed: 1800
Max. Increase Rate: 6000 rpm/minute
Max. Decrease Rate: 6000 rpm/minute
Deadband: 02
P: 00.90 I: 00.10 D: 10.00 Scan: 02
↑=PREV↓=NEXT →=SET-DATA 0=MAIN
```

```
TRC -GRP2 FLOATING SUCTION SETP- 9:11
Float On/Off: OFF
Target Temperature : 010
Using: T1 of T1:Y T2:N T3:N T4:N
Max. Suction Pressure : 45.0
Min. Suction Pressure : 39.0
Float Interval : 15m
↑=PREV↓=NEXT →=SET-DATA 0=MAIN
```

```
TRC -GRP2 VAR.SPEED SETPOINTS- 09:12
Min. Speed: 0900 rpm Max. Speed: 1800
Max. Increase Rate: 6000 rpm/minute
Max. Decrease Rate: 6000 rpm/minute
Deadband: 02
P: 00.90 I: 00.10 D: 10.00 Scan: 02
↑=PREV↓=NEXT →=SET-DATA 0=MAIN
```

REMEMBER: On all of the PRESSURE SETPOINT Screens, PRESS the [RIGHT ARROW] to move the cursor to the item to be set. Continue pressing this key until the cursor is off the screen to allow you to PRESS [DOWN ARROW] to advance to the next PRESSURE SET POINTS Screen

• d. Pressure Setpoints - Satellite Compressors -

The first five screens were for compressor groups 1 and 2. The next 3 screens are for the two satellite compressors. Enter the cursor into the screen [RIGHT ARROW] to enter setpoints in the same manner as was done for the compressor groups 1 and 2.

```
TRC -SAT1 VAR. SPEED SETPOINTS- 01:20
Min. Speed: 0900 rpm Max Speed : 1800
Max. Increase Rate: 6000 rpm/minute
Max. Decrease Rate: 6000 rpm/minute
P: 00.90 I: 00.10 D: 10.00 Scan: 02
↑=PREV↓=NEXT →=SET-DATA 0=MAIN
```

```
TRC -SAT2 VAR. SPEED SETPOINTS- 01:20
Min. Speed: 0900 rpm Max Speed : 1800
Max. Increase Rate: 6000 rpm/minute
Max. Decrease Rate: 6000 rpm/minute
P: 00.90 I: 00.10 D: 10.00 Scan: 02
↑=PREV↓=NEXT →=SET-DATA 0=MAIN
```

The last setpoint screen was shown in Section 9.b Set Up - Satellite Compressors.

9. Transducer Offsets

All pressure transducers are shipped from the factory with the calibrated offset marked on the transducer. It is necessary that these be entered into the TRC to enable accurate readings. This is done by going to the TRANSDUCER OFFSETS menu as follows:

From the Configuration menu-

```

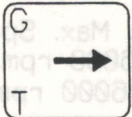
TRC -CONFIGURATION- 10:35
1-Input Definition      5-Xducer Setup
2-Output Definition     6-Host Network
3-System Information    7-I/O Board Setup
4-Remote Communication
SELECT NUMBER          0=MAIN
  
```

Press



```

TRC -TRANSDUCER OFFSETS- 10:35
Grp1 Suct: 00.0 Dchg: 000 Sat1: 00.0
Grp2 Suct: 00.0 Sat2: 00.0
Oil 1 2 3 4 5 6 7
Pres 000 000 000 000 000 000 000
    8 9 10 11 12 13 14 15
    000 000 000 000 000 000 000 000
↑=PREV↓=NEXT →=SET-DATA 0=MAIN
  
```

Press  to place the cursor in the screen then enter the offset numbers for Grp1 suction transducer and press [RIGHT ARROW] to continue to Dchg transducer. Continue this until Sat1, Grp2, Sat2, and all Oil pressure transducers have been entered. Notice the allowable range at the bottom prompt bar.

```

TRC -TRANSDUCER OFFSETS- 10:04
Grp1 Suct: 00.0 Dchg: 000 SAT1: 00.00
Grp2 Suct: 00.0 Sat2: 00.0
Oil 1 2 3 4 5 6 7
Pres 000 000 000 000 000 000 000
    7 8 9 10 11 12 13 14 15
    000 000 000 000 000 000 000 000
RANGE: -9.9 to 9.9 lbs ->=SET-DATA
  
```

The standard transducer is 500 psi for discharge pressure and oil pressure and 100 psi for suction pressure.

10. Condenser Control

a. Condenser Status -

Press [0] to return to the main menu. From the main menu press [2] for Condenser Control. There are three screens:

Condenser Status

Condenser Setpoints

Condenser Runtimes

```

TRC -CONDENSER STATUS- 10:05
Fans:F01 F02 F03 F04 F05 F06 07 08
      ON ON ON .. ..
Current:200 Delay--On: 030sec
Setpoint:200 Delay-Off: 030sec
Control Parameter: PRESSURE
Equalize Runtimes: NO
↑-PREV ↓-NEXT 0=MAIN
  
```

The status screen at right shows what is happening.

• b. Condenser setpoints -

From the status screen press [DOWN ARROW] to go to the condenser setpoint screen. Press the [RIGHT ARROW] to enter the cursor into the screen to enter the setoints. You will notice that entering setpoints for condenser control is done in the same manner as was done for compressor control. Look at the help line for choices and ranges.

```

TRC -CONDENSER SETPOINTS- 10:09
#Fans:6   Deadband:10 Delay--On: 030s
          Setpoint:200 Delay-Off: 030s
Fast Recovery- PSI   Above Setpt: 15
Fast Recovery-Delay Between Fans:006s
Control Parameter:  PRESSURE
Equalize Runtimes : Y
↑-PREV↓-NEXT →-SET-DATA  0-MAIN
  
```

The choices are as follows:

#Fans Enter the number of fans for your application. The range is 0 to 8.

Deadband: Range is 1 to 99. We recommend 10. If [0] is entered the fan will stay off.

Delay--On: Range is 0 to 240 seconds. We recommend 30 seconds.

Setpoint: This is the pressure at which the TRC maintains in the discharge side of the system. The range is 0 to 999 psi (gauge).

Delay-Off: Range is 0 to 240 seconds. We recommend 30 seconds.

Fast Recovery-PSI Above Setpoint.: This allows for faster recovery when the discharge pressure is higher than setpoint by the amount of the setpoint entered. The range is 1 to 99 psi. We recommend 15.

Fast Recovery-Delay Between Fans: This allows for shorter intervals during faster recovery for the on delay of the fans. Range is 0 to 240 seconds.. We recommend 6 seconds.

Control Parameter: You may control the discharge pressure by sensing either pressure or temperature. We recommend pressure.

Equalize Runtimes: (Equalize the run times of the fans?) - YES or NO?

• c. Condenser Runtimes -

TRC -CONDENSER RUNTIMES-	10:12
Fan # F01 F02 F03 F04	
Status .. ON ON ..	
Runtime 00000 00000 00000 00000	
Fan # F05 F06 F07 F08	
Status	
Runtime 00000 00000 00000 00000	
↑-PREV →-SET-DATA 0-MAIN	

The last screen is Condenser Runtimes. This screen displays the runtimes in hours for each of the condenser fans. If you desire to reset this to zero (CLEAR RUNTIMES) press the [RIGHT ARROW] to enter the cursor into the screen. Runtime for Fan 01 is first. If you wish to clear the runtime press[0].

Press [0] to return to the main menu.

11. Defrost Control

TRC -DEFROST CONTROL- 09:34	
1-Status	2-Setpoint
Defrost circuit number: (1)	
ENTER 1-23	

TRC -DEFROST CONTROL- 09:34	
1-Status	2-Setpoint
Defrost circuit number: (1)	
ENTER 1-23	

Complete a *TIME OF DEFROST* chart for all of the defrost circuits on the rack. (See Appendix A.) Having this form completed will speed the entry of defrost data.

From the main menu press [3] to select defrost and the TRC prompts us to select either status or set points. Select set points [2]. Select [1] then press [ENT] to enter defrost circuit #1. To fill in the blanks press [RIGHT ARROW] to enter into the screen with cursor on name. The choices are as follows:

Name: Enter the defrost load's name. 15 CHARACTER LIMIT.

Status: (N)ORM, (R)UN-OFF, or (M)AN for normal, run-off, or manual.

Duration: Length of the defrost period. RANGE: 0-240 MINUTES.

Type: OFF-(C)YCLE, HOT-(G)AS, or (E)LEC types of defrost.

Run-off: Run-off time. RANGE: 0-60 MINUTES.

Term. Type: Termination by: (N)ONE, (S)ENSE, (O)PEN, or (C)LSD.

Term. Point: Temperature set for defrost termination. RANGE: - 50 TO 99 F.

Start Times: Set the start times. RANGE: 00:00 - 23.99. Enter NONE for extras.

Once the settings on this screen are in, you have completed one circuit. Move the cursor off the screen, press [DOWN ARROW] to see the next circuit's settings. Press [RIGHT ARROW] to enter cursor into the screen to make the settings. There are a total of 23 defrost circuits available.

Manual Defrost - How do we force a manual defrost? Go to the defrost circuit # desired under the defrost setpoint screen, then press [RIGHT ARROW] twice to go to the status field. Press [RED] [M] to start a manual defrost. The circuit will go into defrost for the duration that had been specified in the duration field, or until the terminator is satisfied. It will then revert back to NOR (normal) or automatic control.

12. Sensor Control

Each TRC can monitor and or control up to 48 sensor inputs. These sensors may be specified as temperatures, pressures, humidities, switches, or a universal type called linear. If you have questions about these call CPC Engineering. Typical applications include the control of single condensing units from pressure or temperature.

• a. Setup -

Go to the main menu. Press [4] for sensor control. The options for selection are shown in the screen to the right here. You will note that these are very similar to the options for pressure control. Go to Setup first, so press [2]. The TRC prompts us for a sensor number. You may select from 1 to 48. If you just press [ENT], the number shown in parenthesis will be selected. Press [RIGHT ARROW] to move cursor into the screen. Fill in the blanks for the following items:

TRC -SENSOR CONTROL-		10:25
1-Status	3-Setpoints	
2-Setup	4-Alarms	
Sensor number : (1)	5-Logs	
SELECT NUMBER		0=MAIN
TRC -SENSOR SETUP-		10:36
No.: 01 Status: ON Name:		
Type:Temp :(T)emp, (1)00, (2)00, (5)00,		
(R)ef.Leak, (H)um, (D)ig, (L)inear		
Using ONLY of 000,000,000		
Logging Interval (HH:MM:SS) : 00:03:00		
↑=PREV ↓=NEXT →=SET-DATA		0=MAIN

Name: Up to 15 characters.

Type: Enter a letter or number as shown on the screen for Temp, 100 psi pressure, 200 psi pressure, 500 psi pressure, CFC Ref. Leak Detector, Humidity, Digital (switch closures), or Linear.

Using: For temperature sensors you may select (O)NLY for just one sensor, the one shown in the top line of screen, or (A)VG for the average of up to three additional sensors, or MA(X) for the maximum of the sensors, or MI(N) for the minimum of the several sensors. The zeros are the extra sensor numbers.

000: Pressing the [RIGHT ARROW] brings the cursor to 000. This is the sensor number for additional sensors. Range is 1 to 48. You may assign numbers to up to 4 sensors if you plan to average or use the minimum or maximum of several sensors.

Logging Interval: This is the interval in time between loggings. This may be from 1 second up to 99 Hours, 99 Minutes, 99 Seconds (HH:MM:SS). Three minutes (00:03:00) is recommended.

That concludes the setup for sensor #1. Press [DOWN ARROW] for next sensor. You may setup from 1 to 48 sensors.

• b. Setpoints -

When finished with the setup of all of the probes, press [0] to return to the menu. If you plan to control from your probes, rather than just monitor or alarm, you will need to enter your setpoints. Press [3] for setpoints, then select the sensor desired and press [ENT].

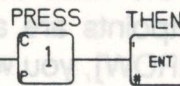
TRC -SENSOR CONTROL- 10:41		TRC -SENSOR SETPOINTS- 10:46	
1-Status	3-Setpoints	No.: 01 Status: ON Name:	
2-Setup	4-Alarms	Type: Temp : Eng. unit DEG	
Sensor number : (1)	5-Logs	Current Values: 000 of 000 000 000 000	
		On @ 032 Dly 005s Off @ 028 Dly 001s	
SELECT NUMBER	0=MAIN	↑=PREV ↓=NEXT →=SET-DATA	0=MENU

Press [RIGHT ARROW] to place cursor on the screen at "Name". If you have already named that circuit simply move on to "Eng. unit" field by pressing [RIGHT ARROW]. You can put in PSI, DEG, F, or whatever units you want to use to label the number when it is shown. The next line of the screen is a status of the probes. If you have selected multiple probes under setup then the current value will be either average, high, or low as per your setup choice. The next four numbers are the values of the individual probes that make up the current value. If you only have one probe assigned, the current value should be the same as the first of the four numbers shown. Press [RIGHT ARROW] to go to last line for the actual setpoints. Here you set the cut on setpoint, on delay in seconds, cut off setpoint, and off delay in seconds. The delay range is 0 to 240 seconds. The on and off setpoints have a range of -50 to 270 °F for temperature and 0 to 499 psi for pressure. When done press [RIGHT ARROW] to get cursor off the screen, then [0] to return to the menu.

• c. Alarms -

If you wish to set alarm values for the different probes, press [4] from the sensor control menu to see the following screens. Press [1] (or the sensor number desired) then [ENT].

TRC -SENSOR CONTROL- 10:25	
1-Status	3-Setpoints
2-Setup	4-Alarms
Sensor number : (1)	5-Logs
SELECT NUMBER 0=MAIN	



TRC -SENSOR ALARM SETPOINTS- 10:25	
No: 01	Name: Del Line Up #1
Type: Temp	Eng. Unit F
Alarms: High	NON Low Non Dly 000m
Notices: High	NON Low Non Dly 000m
↑-PREV ↓-NEXT →-SET-DATA 0=MENU	

Press  to enter the cursor on to the screen. You may change the name or leave it as previously set. Then you may set the low and high alarms and notices along with time delays as desired. Time delays will prevent momentary very short duration occurrences from causing nuisance alarms. Notice values will put a message in the alarm log, but not signal an alarm. Information such as a prolonged high of 2 degrees below the high alarm setting could be a useful notice. After alarm setpoints have been made press [0] to return to the sensor control menu. Press [0] once again to return to the main menu.

13. Review and Getting Information

• a. Status-

TRC -STATUS MENU- 10:55	
1-Main Status	2-Input Status
SELECT NUMBER 0=MAIN	

CHOOSE

Grp1:OPEN --TRC 5.01-- 02/01 10:55	
C1 C2 C3 C4	5 6 7 8 9 0 SAT- 1 2
0N 0N	...
Grp2:OPEN	Dsch Press:OPE
C1 C2 3 4 5 F1 F2 F3 F4 F5 F6 7 8	...
...	ON ON ON ON ON ..
VS1:000%	VS2:000% S1VS:000% S2VS:000%
↑-PREV 0=MAIN	

PRESS

OR

TRC -INPUT STATUS- 10:57			
G1 SUC PRES	047P	G1 SUC TMP	025F
DSCH PRESS	200P	DSCH TEMP	105F
SAT1 P/T	OPEN	SAT2 P/T	OPEN
DEFR INHIB	OPEN	G1 CASE 1	OPEN
C1 CASE 2	OPEN	G1 CASE 3	OPEN
G1 CASE 4	OPEN	PHASE LOSS	OPEN
↑-PREV ↓-NEXT 0=MENU			

PRESS

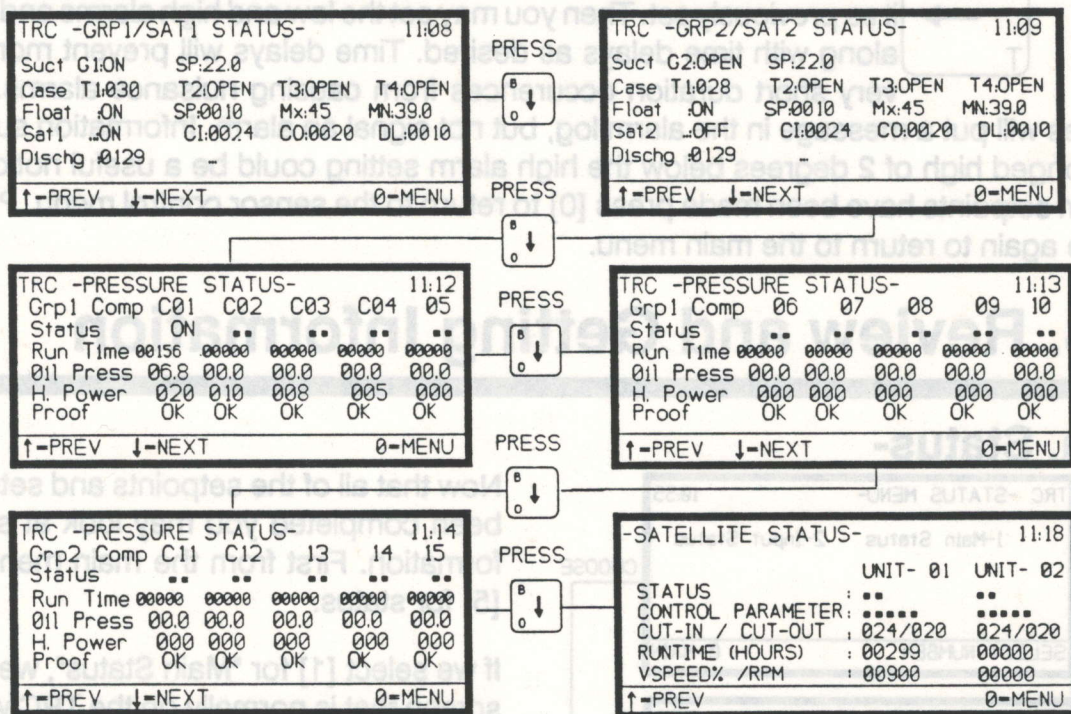
2

Now that all of the setpoints and setup have been completed you may look at some information. First from the main menu select [5] for status.

If we select [1] for "Main Status", we see the screen that is normally on the TRC when left alone. Look carefully at the screen, there is a lot of information here. There is the suction pressure for group 1 and the status of each compressor on that group. Over to the right, we see the status of any satellite compressors that we have connected. On the next line we see the suction pressure of the group 2, the second manifold, if you have one. Then there is the discharge pressure. Next is the condenser fans and last the variable speed compressor status.

If we select [2] for "Input Status" we see all of the inputs for the rack. Using the [Down Arrow] we can scroll through all of the inputs. You may see detailed status for pressure control, defrost control, and sensor control by selecting "Status" at each menu respectively.

For detailed information about your parallel compressors control select [1] pressure from the main menu then [1] from the pressure menu for status. The screen shows us the current group 1 pressure, set point, the value of the floating probes, and the floating setpoints. Satellite #1 status and setpoints are also shown along with the discharge pressure. If you press the [DOWN ARROW], you will see the same information for group 2. Again press the [DOWN ARROW] to see information about each compressor. This includes, on-off status, run time in hours, oil pressure, the compressor horsepower, and whether the proof is okay or in alarm. Continue to press [DOWN ARROW] to see information for the rest of the compressors and the satellite compressors.



• b. Logs -

Logs is a display of historical data based on time intervals as set by the interval selected under alarms. The display will show values for the last 600 intervals. For example under the pressure menu select [4] Logs. Then you have a choice of logs for group 1 or group 2. If you choose [1] the most recent events would appear on screen as shown here. The display shows date, time, suction pressure, discharge pressure, and the floating probe temperatures. Pressing the [DOWN OR UP ARROW] brings into view all of the past logs. Logs are available from the Pressure Control and Sensor Control menus. Also a log of alarms and notices is shown under [9] Alarms at the main menu.

TRC -GROUP 1 LOGS- #175 of 579 09:20									
DATE	TIME	SUCT	DCHG	T1	T2	T3	T4		
02/19	09:20	040	250	010	010	010	010		
02/19	09:17	040	250	010	010	010	010		
02/19	09:14	041	250	012	010	010	011		
02/19	09:11	041	250	010	012	010	010		
02/19	09:08	042	250	010	010	012	010		
↑-PREV ↓-NEXT 0-MENU									

14. System Information and Remote Communications

While this next step is not absolutely a must to operate the individual TRCs, it is important and should be done.

• a. Date & Time, Passwords, Phone No.s, and DST -

From the CONFIGURATION SCREEN press [3] to go to System Information.

```

TRC -CONFIGURATION-          09:59
1-Input Definition           5-Xducer Setup
2-Output Definition          6-Host Network
3-System Information          7-I/O Board Setup
4-Remote Communication
SELECT NUMBER                0-MAIN
  
```

PRESS

E
3
R

```

TRC -SYSTEM INFORMATION-      10:00
Unit Name: CPC'S TOTAL RACK CONTROL
Date: 02/06/91 Time: 10:00 Day: WED
Passwords: #1: 100   #3: 300
           #2: 200   #4: 400
↑-PREV↓-NEXT →-SET-DATA    0-MENU
  
```

P R E S S

G
→
T

To enter the cursor into the screen as shown to the right.

Name this TRC unit and do the same for all on the network. Also, continue to use the [RIGHT ARROW] to set the date, time and date. You may change the passwords if you desire. The #1 level allows for monitoring only where #2 and #3 give limited access, but #4 gives complete access.

Press [RIGHT ARROW] to enter this second screen then enter telephone numbers if you plan to use automatic dial out through a modem. If desired you may set the beginning and ending of day light savings mode to (1) AUTO, (2) MANUAL, or (3) NONE. When completed move the cursor off the screen and press [0] to return to the Configuration Menu.

```

TRC -SYSTEM INFORMATION-      10:01
Unit Name: CPC'S TOTAL RACK CONTROL
Date: 02/06/91 Time: 10:01 Day: WED
Passwords: #1: 100   #3: 300
           #2: 200   #4: 400
25 CHARACTER LIMIT          ->-SET DATA
  
```

B
↓
0

Press [DOWN ARROW] for next screen.

```

TRC -SYSTEM INFORMATION-      10:30
Phone Number #1:
                #2:
DAYLIGHT SAVINGS MODE: AUTOMATIC (USA)
DST MANUAL SET START : 04/07/91
DST MANUAL SET END   : 10/27/91
↑-PREV                >-SET-DATA    0-MENU
  
```

• b. Remote Communications

From the Configuration menu press [4] to see COMMUNICATIONS SETUP. Enter the number of each TRC by pressing [RIGHT ARROW] to move cursor into the screen. Nothing else is required to be done unless CPC Engineering advises.

```

TRC -COMMUNICATIONS SETUP-    10:31
Unit #: 01
Primary RS-232 Port Protocol:
  Baud: 1200 Parity: N Data Bits: 8
Secondary Rs-232 Port Protocol:
  Baud: 9600 Parity: E Data Bits: 7
↑-PREV                >-SET DATA    0-MENU
  
```


APPENDIX A

DEFROST PLANNING CHART

TIME OF DEF

UNIT NO. CIRCUIT NO.	FIXTURE	FAILSAFE SETTING	TIME OF DEFROST A.M.
		00.15	
		00.30	
		00.45	
		01.00	
		01.15	
		01.30	
		01.45	
		02.00	
		02.15	
		02.30	
		02.45	
		03.00	
		03.15	
		03.30	
		03.45	
		04.00	
		04.15	
		04.30	
		04.45	
		05.00	
		05.15	
		05.30	
		05.45	
		06.00	
		06.15	
		06.30	
		06.45	
		07.00	
		07.15	
		07.30	
		07.45	
		08.00	
		08.15	
		08.30	
		08.45	

FORM DEF021191

Store No:

Location:

A

OST PLANNING CHART

		TIME OF DEFROST	
		P.M.	
09.30		12.15	
09.45		12.30	
10.00		12.45	
10.15		13.00	
10.30		13.15	
10.45		13.30	
11.00		13.45	
11.15		14.00	
11.30		14.15	
11.45		14.30	
12.00		14.45	
		15.00	
		15.15	
		15.30	
		15.45	
		16.00	
		16.15	
		16.30	
		16.45	
		17.00	
		17.15	
		17.30	
		17.45	
		18.00	
		18.15	
		18.30	
		18.45	
		19.00	
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		19.45	
		20.00	
		20.15	
		20.30	
		20.45	
		21.00	
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		21.45	
		22.00	
		22.15	
		22.30	
		22.45	
		23.00	
		23.15	
		23.30	
		23.45	
		24.00	

COMPUTER PROCESS CONTROLS, INC.

APPENDIX B

SET UP GUIDE FORMS

CPC TRC SETUP GUIDE FORMS

**USE THESE FORMS TO RECORD THE
DATA PRIOR TO SETING UP THE TRC.**

TRC START UP

Version 0391

Software Rev. 5.01 and up

Computer Process Controls, Inc.
1275 Kennestone Circle
Suite 100
Marietta, Ga. 30066

(404) 425-2724

TRC



COMPUTER PROCESS CONTROLS, INC.

TRC SETUP GUIDE FORMS

COMPANY: _____ DATE: ____/____/____

STORE NO.: _____ TRC NAME: _____

ENGINEER: _____ TRC NO.: _____

1. HARDWARE SETUP

A. SET NETWORK SWITCHES

TRC S1:

1	2	3	4	5	6	7	8

ON
OFF

8RO BOARD #1-S1:

1	2	3	4	5	6	7	8

ON
OFF

8RO BOARD #2-S1:

1	2	3	4	5	6	7	8

ON
OFF

8RO BOARD #3-S1:

1	2	3	4	5	6	7	8

ON
OFF

8RO BOARD #4-S1:

1	2	3	4	5	6	7	8

ON
OFF

8RO BOARD #5-S1:

1	2	3	4	5	6	7	8

ON
OFF

8RO BOARD #6-S1:

1	2	3	4	5	6	7	8

ON
OFF

8RO BOARD #7-S1:

1	2	3	4	5	6	7	8

ON
OFF

8RO BOARD #8-S1:

1	2	3	4	5	6	7	8

ON
OFF

16AI BOARD #1-S3:

1	2	3	4	5	6	7	8

ON
OFF

16AI BOARD #2-S3:

1	2	3	4	5	6	7	8

ON
OFF

16AI BOARD #3-S3:

1	2	3	4	5	6	7	8

ON
OFF

16AI BOARD #4-S3:

1	2	3	4	5	6	7	8

ON
OFF

4AO BOARD #1-S1:

1	2	3	4	5	6	7	8

ON
OFF

B. SET FAILSAFE SWITCHES AND NO/NC JUMPERS

8RO BOARD #1-S2:

FAILSAFE SWITCH							
1	2	3	4	5	6	7	8

ON
OFF

NO/NC JUMPERS JU 4-11

1	2	3	4	5	6	7	8

NO
NC

8RO BOARD #2-S2:

FAILSAFE SWITCH							
1	2	3	4	5	6	7	8

ON
OFF

NO/NC JUMPERS JU 4-11

1	2	3	4	5	6	7	8

NO
NC

8RO BOARD #3-S2:

FAILSAFE SWITCH							
1	2	3	4	5	6	7	8

ON
OFF

NO/NC JUMPERS JU 4-11

1	2	3	4	5	6	7	8

NO
NC

8RO BOARD #4-S2:

FAILSAFE SWITCH							
1	2	3	4	5	6	7	8

ON
OFF

NO/NC JUMPERS JU 4-11

1	2	3	4	5	6	7	8

NO
NC

8RO BOARD #5-S2:

FAILSAFE SWITCH							
1	2	3	4	5	6	7	8

ON
OFF

NO/NC JUMPERS JU 4-11

1	2	3	4	5	6	7	8

NO
NC

8RO BOARD #6-S2:

FAILSAFE SWITCH							
1	2	3	4	5	6	7	8

ON
OFF

NO/NC JUMPERS JU 4-11

1	2	3	4	5	6	7	8

NO
NC

8RO BOARD #7-S2:

FAILSAFE SWITCH							
1	2	3	4	5	6	7	8

ON
OFF

NO/NC JUMPERS JU 4-11

1	2	3	4	5	6	7	8

NO
NC

8RO BOARD #8-S2:

FAILSAFE SWITCH							
1	2	3	4	5	6	7	8

ON
OFF

NO/NC JUMPERS JU 4-11

1	2	3	4	5	6	7	8

NO
NC

C. SET TERMINATING RESISTANCE JUMPERS

TRC COM A:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

TRC COM B:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

485A ALARM BOX:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

8RO BOARD #1:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

8RO BOARD #2:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

8RO BOARD #3:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

8RO BOARD #4:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

8RO BOARD #5:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

8RO BOARD #6:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

8RO BOARD #7:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

8RO BOARD #8:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

16AI BOARD #1:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

16AI BOARD #2:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

16AI BOARD #3:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

16AI BOARD #4:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

4AO BOARD #2:

JU1	JU2	JU3
☐	☐	☐
☐	☐	☐
☐	☐	☐
		UP
		DOWN

D. SET 4AO MODE SWITCH - SW3:

1	2	3	4
☐	☐	☐	☐
☐	☐	☐	☐

ON
OFF

E. SET 16AI INPUT SWITCHES**16AI BOARD #1 - S2**

1	2	3	4	5	6	7	8

 ON
OFF
16AI BOARD #1- S1:

1	2	3	4	5	6	7	8

 ON
OFF
16AI BOARD #2- S2:

1	2	3	4	5	6	7	8

 ON
OFF
16AI BOARD #2- S1:

1	2	3	4	5	6	7	8

 ON
OFF
16AI BOARD #3- S2:

1	2	3	4	5	6	7	8

 ON
OFF
16AI BOARD #3- S1:

1	2	3	4	5	6	7	8

 ON
OFF
16AI BOARD #4- S2:

1	2	3	4	5	6	7	8

 ON
OFF
16AI BOARD #4- S1:

1	2	3	4	5	6	7	8

 ON
OFF
F. SET VOLTAGE JUMPERS**TRC :**

JU7	JU8
	UP
	DOWN

485A:

JU1	JU2
	UP
	DOWN

2. KEYPAD SETUP

PASSWORD: _____

NOTE: A NUMBER IN BRACKETS REPRESENTS THE KEY TO PRESS. EXAMPLE: [1].

A.SET DEVICE NUMBERS

FROM MAIN MENU [7] CONFIGURATION

[7] I/O BOARD SETUP

[2] SET DEVICE #'S

NUMBER OF 8R0 BOARDS ?

NUMBER OF 16AI BOARDS?

NUMBER OF 4A0 BOARDS ?

[6] HOST NETWORK

[2] SET DEVICE #'S

THIS CONTROLLER (TRC) DEVICE #?

NUMBER OF TRC'S ON NETWORK?

NUMBER OF TEC'S ON NETWORK ?

NUMBER OF TLC'S ON NETWORK ?

NUMBER OF 485'S ON NETWORK ?

PHASE LOSS? WHERE? DEVICE NO. ?

B. INPUT DEFINITIONS

FROM MAIN MENU [7] CONFIGURATION

[1] INPUT DEFINITIONS

	BD	PT		BD	PT
G1 SUC PRS			G1 SUC TM		
DSCH. PRESS.			DSCH. TEMP.		
SAT1 P/T			SAT2 P/T		
SPARE			DEFR. INHIBIT		
G1 CASE 1			G1 CASE 2		
G1 CASE 3			G1 CASE 4		
PHASE LOSS			SPARE		
SPARE			SPARE		
COND. INLET			COND. OUTLET		
SPLIT STAT.			RECLM. STAT.		
FAN1 PROOF			FAN2 PROOF		
FAN3 PROOF			FAN4 PROOF		
FAN5 PROOF			FAN6 PROOF		
FAN7 PROOF			FAN8 PROOF		
SUCT.SETUP			SPARE		
SPARE			SPARE		
G2 SUC PRS			G2 SUC TMP		
G2 CASE 1			G2 CASE 2		
G2 CASE 3			G2 CASE 4		
SPARE			SPARE		
DEFR. 01			DEFR. 02		
DEFR. 03			DEFR. 04		
DEFR. 05			DEFR. 06		
DEFR. 07			DEFR. 08		

	BD	PT
DEFR. 09		
DEFR. 11		
DEFR. 13		
DEFR. 15		

DEFR. 17		
DEFR. 19		
DEFR. 21		
DEFR. 23		

OIL PRESS 01		
OIL PRESS 03		
OIL PRESS 05		
OIL PRESS 07		

OIL PRESS 09		
OIL PRESS 11		
OIL PRESS 13		
OIL PRESS 15		

COMP01 PRF.		
COMP03 PRF.		
COMP05 PRF.		
COMP07 PRF.		

COMP09 PRF.		
COMP11 PRF.		
COMP13 PRF.		
COMP15 PRF.		

SENSOR INPUTS:

	BD	PT
SENSOR 01		
SENSOR 03		
SENSOR 05		
SENSOR 07		

	BD	PT
DEFR. 10		
DEFR. 12		
DEFR. 14		
DEFR. 16		

DEFR. 18		
DEFR. 20		
DEFR. 22		
SPARE		

OIL PRESS 02		
OIL PRESS 04		
OIL PRESS 06		
OIL PRESS 08		

OIL PRESS 10		
OIL PRESS 12		
OIL PRESS 14		
SPARE		

COMP02 PROOF		
COMP04 PROOF		
COMP06 PROOF		
COMP08 PROOF		

COMP10 PROOF		
COMP12 PROOF		
COMP14 PROOF		
SPARE		

	BD	PT
SENSOR 02		
SENSOR 04		
SENSOR 06		
SENSOR 08		

INPUTS **BD** **PT**

SENSOR 09
 SENSOR 11
 SENSOR 13
 SENSOR 15

SENSOR 17
 SENSOR 19
 SENSOR 21
 SENSOR 23

SENSOR 25
 SENSOR 27
 SENSOR 29
 SENSOR 31

SENSOR 33
 SENSOR 35
 SENSOR 37
 SENSOR 39

SENSOR 41
 SENSOR 43
 SENSOR 45
 SENSOR 47

VS1 INVALM
 VS1 OIL
 S1VSINVALM
 SPARE

VS2 INVALM
 VS2 OIL
 S2VSINVALM
 SPARE

BD **PT**

SENSOR 10
 SENSOR 12
 SENSOR 14
 SENSOR 16

SENSOR 18
 SENSOR 20
 SENSOR 22
 SENSOR 24

SENSOR 26
 SENSOR 28
 SENSOR 30
 SENSOR 32

SENSOR 34
 SENSOR 36
 SENSOR 38
 SENSOR 40

SENSOR 42
 SENSOR 44
 SENSOR 46
 SENSOR 48

VS1 PROOF
 VS1 0TO10V
 SPARE
 SPARE

VS2 PROOF
 VS2 0TO10V
 SPARE
 SPARE

SPARE INPUTS:

	BD	PT
SPARE		
SPARE		
SPARE		
SPARE		

SPARE		
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SPARE		
SPARE		

C. OUTPUT DEFINITIONS

FROM MAIN MENU [7] CONFIGURATION

[2] OUTPUT DEFINITIONS

	BD	PT
COMP #01		
COMP #03		
COMP #05		
COMP #07		

COMP #09		
SAT #01		
ALARM		
SPARE		

COMP #11		
COMP #13		
COMP #15		
SPARE		

C. FAN #01		
C. FAN #03		
C. FAN #05		
C. FAN #07		

R. SOL #01		
R. SOL #03		
R. SOL #05		
R. SOL #07		

R. SOL #09		
R. SOL #11		
R. SOL #13		
R. SOL #15		

R. SOL #17		
R. SOL #19		
R. SOL #21		
R. SOL #23		

	BD	PT
COMP #02		
COMP #04		
COMP #06		
COMP #08		

COMP #10		
SAT #02		
SPARE		
SPARE		

COMP #12		
COMP #14		
SPARE		
SPARE		

C. FAN #02		
C. FAN #04		
C. FAN #06		
C. FAN #08		

R. SOL #02		
R. SOL #04		
R. SOL #06		
R. SOL #08		

R. SOL #10		
R. SOL #12		
R. SOL #14		
R. SOL #16		

R. SOL #18		
R. SOL #20		
R. SOL #22		
SPARE		

OUTPUTS:

BD

PT

H. SOL #01

H. SOL #03

H. SOL #05

H. SOL #07

H. SOL #09

H. SOL #11

H. SOL #13

H. SOL #15

H. SOL #17

H. SOL #19

H. SOL #21

H. SOL #23

SEN CTL 01

SEN CTL 03

SEN CTL 05

SEN CTL 07

SEN CTL 09

SEN CTL 11

SEN CTL 13

SEN CTL 15

SEN CTL 17

SEN CTL 19

SEN CTL 21

SEN CTL 23

SEN CTL 25

SEN CTL 27

SEN CTL 29

SEN CTL 31

H. SOL #02

H. SOL #04

H. SOL #06

H. SOL #08

H. SOL #10

H. SOL #12

H. SOL #14

H. SOL #16

H. SOL #18

H. SOL #20

H. SOL #22

MASTER LLS

SEN CTL 02

SEN CTL 04

SEN CTL 06

SEN CTL 08

SEN CTL 10

SEN CTL 12

SEN CTL 14

SEN CTL 16

SEN CTL 18

SEN CTL 20

SEN CTL 22

SEN CTL 24

SEN CTL 26

SEN CTL 28

SEN CTL 30

SEN CTL 32

BD

PT

OUTPUTS:

BD

PT

BD

PT

SEN CTL 33

--	--

SEN CTL 34

--	--

SEN CTL 35

--	--

SEN CTL 36

--	--

SEN CTL 37

--	--

SEN CTL 38

--	--

SEN CTL 39

--	--

SEN CTL 40

--	--

SEN CTL 41

--	--

SEN CTL 42

--	--

SEN CTL 43

--	--

SEN CTL 44

--	--

SEN CTL 45

--	--

SEN CTL 46

--	--

SEN CTL 47

--	--

SEN CTL 48

--	--

VS1 ALARM

--	--

VSS1 ALARM

--	--

VS2 ALARM

--	--

VSS2 ALARM

--	--

INV1 RESET

--	--

INVS1 RSET

--	--

INV2 RESET

--	--

INVS2 RSET

--	--

SPARE

--	--

SPARE

--	--

SPARE

--	--

SPARE

--	--

SPARE

--	--

SPARE

--	--

SPARE

--	--

SPARE

--	--

D. PRESSURE CONTROL

[1] PRESSURE CONTROL

[6] SETUP

TYPE COMP:	01	02	03	04	05
(C)OMP (V)S or (X)CLEAR?					
RUN TIME: (0) CLEAR?					
OIL SENS: (P)RESS, (C)LSD, (O)PEN or (N)ONE?					
OIL PRESS: RANGE:0-99.9					
H. POWER:: RANGE:0-999					
PROOF: (Y)ES or (N)O?					

[1] PRESSURE CONTROL [6] SETUP CON'T.

TYPE COMP:	06	07	08	09	10
(C)OMP (V)S or (X)CLEAR?	_____	_____	_____	_____	_____
RUN TIME: (0) CLEAR?	_____	_____	_____	_____	_____
OIL SENS: (P)RESS, (C)LSD, (O)PEN or (N)ONE?	_____	_____	_____	_____	_____
OIL PRESS: RANGE:0-99.9	_____	_____	_____	_____	_____
H. POWER:: RANGE:0-999	_____	_____	_____	_____	_____
PROOF: (Y)ES or (N)O?	_____	_____	_____	_____	_____
TYPE COMP:	11	12	13	14	15
(C)OMP (V)S or (X)CLEAR?	_____	_____	_____	_____	_____
RUN TIME: (0) CLEAR?	_____	_____	_____	_____	_____
OIL SENS: (P)RESS, (C)LSD, (O)PEN or (N)ONE?	_____	_____	_____	_____	_____
OIL PRESS: RANGE:0-99.9	_____	_____	_____	_____	_____
H. POWER:: RANGE:0-999	_____	_____	_____	_____	_____
PROOF: (Y)ES or (N)O?	_____	_____	_____	_____	_____

DEFR - FORCE COMP ON: _____ PHASE: _____
 (Y)ES or (N)O?
 LEAD CIRCUIT NO.:(1-23) _____
 INHIBIT FLOAT: (Y or N?) _____
 FLOAT DELAY TIME:(0-60M) _____
 RUN COMP DURING RECLAIM: (Y or N) _____
 ONE COMP REMAIN ON: GRP1: (Y or N) _____ GRP2: _____

MAIN MENU**[1] PRESSURE CONTROL****[2] SETPOINTS (LAST SCREEN) SATELLITE SETUP**

TYPE:	1	2
(C)OMP., (V)S, or (X)CLEAR?	_____	_____
CONTROL BY:		
(T)EMP., (P)RESS., or (C)LEAR	_____	_____
CUT IN:		
TEMP (-50 TO 270)	_____	_____
PRESS (0 TO 499)	_____	_____
or (OCN)		
CUT OUT:		
TEMP (-50 TO 270)	_____	_____
PRESS (0 TO 499)	_____	_____
or (OCN)		
DELAY:		
(0 - 240 SEC.)	_____	_____
RUN TIME:		
(0) CLEAR	_____	_____

[1] PRESSURE CONTROL**[2] SETPOINTS - PRESSURE SETPOINTS**

	GROUP 1	GROUP 2	DISCHARGE
		(E)NABLE OR (D)ISABLE	
SETPOINT:	_____	_____	TRIP: _____
(0 TO 99.9)			(50-499)
ON DELAY:	_____	_____	DELAY: _____
(0-240 SEC)			(0-240 SEC)
OFF DELAY:	_____	_____	RESET: _____
(0-240 SEC)			(25-99 LBS)
UNL DELAY:	_____	_____	
(0-240 SEC)			

GRP1 FLOATING SUCTION SETPOINTS

FLOAT ON/OFF: _____

Target Temperature (RANGE: -50 to 99F): _____

USING: T1 _____ **OF** _____ **T1:** _____ **T2:** _____ **T3** _____ **T4** _____

(T)1, (A)VG, (YES) (YES) (YES) (YES)

MA(X), OR ml(N) OR (N)O OR (N)O OR (N)O

MAX. SUCTION PRESSURE: _____

(0-99.9)

MIN. SUCTION PRESSURE: _____

(0-99.9)

FLOAT INTERVAL: _____

(0-60 MIN)

GRP1 VARIABLE SPEED SETPOINTS

MIN. SPEED: _____
(0-9999)

MAX. SPEED: _____
(0-9999)

MAX. INCREASE RATE: _____
(0-9999)

MAX. DECREASE RATE: _____
(0-9999)

DEADBAND: _____
(0-99)

P: _____
(0-99.9)

I: _____
(0-99.9)

D: _____
(0-99.9)

SCAN: _____
(0-99)

GRP2 FLOATING SUCTION SETPOINTS

FLOAT ON/OFF: _____

Target Temperature (RANGE: -50 to 99F): _____

USING: T1 _____ OF

T1: _____

T2: _____

T3: _____

T4: _____

(T)1, (A)VG,
MA(X), OR ml(N)

(YES)
OR (N)O

(YES)
OR (N)O

(YES)
OR (N)O

(YES)
OR (N)O

MAX. SUCTION PRESSURE: _____
(0-99.9)

MIN. SUCTION PRESSURE: _____
(0-99.9)

FLOAT INTERVAL: _____
(0-60 MIN)

GRP2 VARIABLE SPEED SETPOINTS

MIN. SPEED: _____
(0-9999)

MAX. SPEED: _____
(0-9999)

MAX. INCREASE RATE: _____
(0-9999)

MAX. DECREASE RATE: _____
(0-9999)

DEADBAND: _____
(0-99)

P: _____
(0-99.9)

I: _____
(0-99.9)

D: _____
(0-99.9)

SCAN: _____
(0-99)

SAT1 VARIABLE SPEED SETPOINTS

MIN. SPEED: _____
(0-9999)

MAX. SPEED: _____
(0-9999)

MAX. INCREASE RATE: _____
(0-9999)

MAX. DECREASE RATE: _____
(0-9999)

P: _____
(0-99.9)

D: _____
(0-99.9)

SCAN: _____
(0-99.9)

(0-99)

SAT2 VARIABLE SPEED SETPOINTS

MIN. SPEED: _____

(0-9999)

MAX. SPEED _____

(0-9999)

MAX. INCREASE RATE: _____

(0-9999)

MAX. DECREASE RATE: _____

(0-9999)

P: _____

(0-99.9)

D: _____

(0-99.9)

SCAN: _____

(0-99.9)

(0-99)

E. TRANSDUCER SETUP

MAIN MENU

[7] CONFIGURATION

[5] XDCER SETUP - TRANSDUCER OFFSETS

GRP1 SUCT: _____

(-9.9 TO 9.9 LBS)

DCHG: _____

(-99 TO 99 LBS)

SAT1: _____

(-9.9 TO 9.9 LBS)

GRP2 SUCT: _____

(-9.9 TO 9.9 LBS)

DCHG: _____

(-99 TO 99 LBS)

SAT2: _____

(-9.9 TO 9.9 LBS)

OIL PRESS

(-99 TO 99 LBS)

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

TRANSDUCER SETUP

HIGH PRESSURE XDUCERS: _____

(2)00LB (5)00LB

LOW PRESSURE XDUCERS: _____

(1)00LB (2)00LB

F. CONDENSER CONTROL

MAIN MENU

[2] CONDENSER CONTROL (SECOND SCREEN) - CONDENSER SETPOINTS

#FANS: _____

(0-8)

DEADBAND: _____

(1-99 OFF = 0)

SETPOINT: _____

(0-999)

DELAY ON: _____

(0-240 SEC)

DELAY OFF: _____

(0-240 SEC)

FAST RECOVERY - PSI ABOVE SETPOINT: _____

(1-99 OFF = 0)

FAST RECOVERY-DELAY BETWEEN FANS: _____

(0-240 SEC)

CONTROL PARAMETER: _____

((T)EMPERATURE (P)RESSURE)

EQUALIZE RUNTIMES: _____

((Y)ES or (N)O)

CONDENSER RUNTIMES

FAN #	F01	F02	F03	F04
STATUS	ON	ON	ON	ON
RUNTIME:	00000	00000	00000	00000
FAN #	F05	F06	F07	F08
STATUS	..	..	..	..
RUNTIME:	00000	00000	00000	00000
((0) CLEAR RUNTIME)				

G. DEFROST CONTROL

(SEE DEFROST TIMES PLANNING CHART APENDIX A)

MAIN MENU

[3] DEFROST CONTROL

[2] SETPOINT

DEFROST SETPOINTS

CIRCUIT #: 01 NAME: _____
(15 CHARACTER LIMIT)

STATUS: _____ DURATION: _____
(N)NORM, (R)UN-OFF, (0-240 MIN)
or (M)AN

TYPE: _____ RUN-OFF: _____
OFF-(C)YCLE, HOT-(G)AS, (0-60 MIN)
or (E)LEC

TERM. TYPE: _____ TERM. POINT: _____
(N)ONE, (S)ENSE, (-50 TO 99 F)
(O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____

CIRCUIT #: 02 NAME: _____
(15 CHARACTER LIMIT)

STATUS: _____ DURATION: _____
(N)NORM, (R)UN-OFF, (0-240 MIN)
or (M)AN

TYPE: _____ RUN-OFF: _____
OFF-(C)YCLE, HOT-(G)AS, (0-60 MIN)
or (E)LEC

TERM. TYPE: _____ TERM. POINT: _____
(N)ONE, (S)ENSE, (-50 TO 99 F)
(O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____

DEFROST SET POINTS CONT'D.

CIRCUIT #: 03 **NAME:** _____
 (15 CHARACTER LIMIT)

STATUS _____:
 (N)NORM, (R)UN-OFF,
 or (M)AN

TYPE: _____
 OFF-(C)YCLE, HOT-(G)AS,
 or (E)LEC

TERM. TYPE: _____
 (N)ONE, (S)ENSE,
 (O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
 (00:00 - 23:59)
 or (N)ONE 4 _____ 5 _____ 6 _____

DURATION: _____
 (0-240 MIN)

RUN-OFF: _____
 (0-60 MIN)

TERM. POINT: _____
 (-50 TO 99 F)

CIRCUIT #: 04 **NAME:** _____
 (15 CHARACTER LIMIT)

STATUS _____:
 (N)NORM, (R)UN-OFF,
 or (M)AN

TYPE: _____
 OFF-(C)YCLE, HOT-(G)AS,
 or (E)LEC

TERM. TYPE: _____
 (N)ONE, (S)ENSE,
 (O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
 (00:00 - 23:59)
 or (N)ONE 4 _____ 5 _____ 6 _____

DURATION: _____
 (0-240 MIN)

RUN-OFF: _____
 (0-60 MIN)

TERM. POINT: _____
 (-50 TO 99 F)

CIRCUIT #: 05 **NAME:** _____
 (15 CHARACTER LIMIT)

STATUS _____:
 (N)NORM, (R)UN-OFF,
 or (M)AN

TYPE: _____
 OFF-(C)YCLE, HOT-(G)AS,
 or (E)LEC

TERM. TYPE: _____
 (N)ONE, (S)ENSE,
 (O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
 (00:00 - 23:59)
 or (N)ONE 4 _____ 5 _____ 6 _____

DURATION: _____
 (0-240 MIN)

RUN-OFF: _____
 (0-60 MIN)

TERM. POINT: _____
 (-50 TO 99 F)

DEFROST SET POINTS CONT'D.

CIRCUIT #: 06 **NAME:** _____
(15 CHARACTER LIMIT)

STATUS _____:
(N)NORM, (R)UN-OFF,
or (M)AN

TYPE: _____
OFF-(C)YCLE, HOT-(G)AS,
or (E)LEC

TERM. TYPE: _____
(N)ONE, (S)ENSE,
(O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____

DURATION: _____
(0-240 MIN)

RUN-OFF: _____
(0-60 MIN)

TERM. POINT: _____
(-50 TO 99 F)

CIRCUIT #: 07 **NAME:** _____
(15 CHARACTER LIMIT)

STATUS _____:
(N)NORM, (R)UN-OFF,
or (M)AN

TYPE: _____
OFF-(C)YCLE, HOT-(G)AS,
or (E)LEC

TERM. TYPE: _____
(N)ONE, (S)ENSE,
(O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____

DURATION: _____
(0-240 MIN)

RUN-OFF: _____
(0-60 MIN)

TERM. POINT: _____
(-50 TO 99 F)

CIRCUIT #: 08 **NAME:** _____
(15 CHARACTER LIMIT)

STATUS _____:
(N)NORM, (R)UN-OFF,
or (M)AN

TYPE: _____
OFF-(C)YCLE, HOT-(G)AS,
or (E)LEC

TERM. TYPE: _____
(N)ONE, (S)ENSE,
(O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____

DURATION: _____
(0-240 MIN)

RUN-OFF: _____
(0-60 MIN)

TERM. POINT: _____
(-50 TO 99 F)

DEFROST SET POINTS CONT'D.

CIRCUIT #: 09 **NAME:** _____
 (15 CHARACTER LIMIT)

STATUS: _____ **DURATION:** _____
 (N)NORM, (R)UN-OFF, (0-240 MIN)
 or (M)AN

TYPE: _____ **RUN-OFF:** _____
 OFF-(C)YCLE, HOT-(G)AS, (0-60 MIN)
 or (E)LEC

TERM. TYPE: _____ **TERM. POINT:** _____
 (N)ONE, (S)ENSE, (-50 TO 99 F)
 (O)PEN, or (C)LSD

START TIMES: 1 _____ **2** _____ **3** _____
 (00:00 - 23:59)
 or (N)ONE **4** _____ **5** _____ **6** _____

CIRCUIT #: 10 **NAME:** _____
 (15 CHARACTER LIMIT)

STATUS: _____ **DURATION:** _____
 (N)NORM, (R)UN-OFF, (0-240 MIN)
 or (M)AN

TYPE: _____ **RUN-OFF:** _____
 OFF-(C)YCLE, HOT-(G)AS, (0-60 MIN)
 or (E)LEC

TERM. TYPE: _____ **TERM. POINT:** _____
 (N)ONE, (S)ENSE, (-50 TO 99 F)
 (O)PEN, or (C)LSD

START TIMES: 1 _____ **2** _____ **3** _____
 (00:00 - 23:59)
 or (N)ONE **4** _____ **5** _____ **6** _____

CIRCUIT #: 11 **NAME:** _____
 (15 CHARACTER LIMIT)

STATUS: _____ **DURATION:** _____
 (N)NORM, (R)UN-OFF, (0-240 MIN)
 or (M)AN

TYPE: _____ **RUN-OFF:** _____
 OFF-(C)YCLE, HOT-(G)AS, (0-60 MIN)
 or (E)LEC

TERM. TYPE: _____ **TERM. POINT:** _____
 (N)ONE, (S)ENSE, (-50 TO 99 F)
 (O)PEN, or (C)LSD

START TIMES: 1 _____ **2** _____ **3** _____
 (00:00 - 23:59)
 or (N)ONE **4** _____ **5** _____ **6** _____

DEFROST SET POINTS CONT'D.

CIRCUIT #: 12 **NAME:** _____
(15 CHARACTER LIMIT)

STATUS _____: **DURATION:** _____
(N)NORM, (R)UN-OFF, (0-240 MIN)
or (M)AN

TYPE: _____ **RUN-OFF:** _____
OFF-(C)YCLE, HOT-(G)AS, (0-60 MIN)
or (E)LEC

TERM. TYPE: _____ **TERM. POINT:** _____
(N)ONE, (S)ENSE, (-50 TO 99 F)
(O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____

CIRCUIT #: 13 **NAME:** _____
(15 CHARACTER LIMIT)

STATUS _____: **DURATION:** _____
(N)NORM, (R)UN-OFF, (0-240 MIN)
or (M)AN

TYPE: _____ **RUN-OFF:** _____
OFF-(C)YCLE, HOT-(G)AS, (0-60 MIN)
or (E)LEC

TERM. TYPE: _____ **TERM. POINT:** _____
(N)ONE, (S)ENSE, (-50 TO 99 F)
(O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____

CIRCUIT #: 14 **NAME:** _____
(15 CHARACTER LIMIT)

STATUS _____: **DURATION:** _____
(N)NORM, (R)UN-OFF, (0-240 MIN)
or (M)AN

TYPE: _____ **RUN-OFF:** _____
OFF-(C)YCLE, HOT-(G)AS, (0-60 MIN)
or (E)LEC

TERM. TYPE: _____ **TERM. POINT:** _____
(N)ONE, (S)ENSE, (-50 TO 99 F)
(O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____

DEFROST SET POINTS CONT'D.

CIRCUIT #: 15 **NAME:** _____
 (15 CHARACTER LIMIT)

STATUS _____:
 (N)NORM, (R)UN-OFF,
 or (M)AN

TYPE: _____
 OFF-(C)YCLE, HOT-(G)AS,
 or (E)LEC

TERM. TYPE: _____
 (N)ONE, (S)ENSE,
 (O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
 (00:00 - 23:59)
 or (N)ONE 4 _____ 5 _____ 6 _____

DURATION: _____
 (0-240 MIN)

RUN-OFF: _____
 (0-60 MIN)

TERM. POINT: _____
 (-50 TO 99 F)

CIRCUIT #: 16 **NAME:** _____
 (15 CHARACTER LIMIT)

STATUS _____:
 (N)NORM, (R)UN-OFF,
 or (M)AN

TYPE: _____
 OFF-(C)YCLE, HOT-(G)AS,
 or (E)LEC

TERM. TYPE: _____
 (N)ONE, (S)ENSE,
 (O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
 (00:00 - 23:59)
 or (N)ONE 4 _____ 5 _____ 6 _____

DURATION: _____
 (0-240 MIN)

RUN-OFF: _____
 (0-60 MIN)

TERM. POINT: _____
 (-50 TO 99 F)

CIRCUIT #: 17 **NAME:** _____
 (15 CHARACTER LIMIT)

STATUS _____:
 (N)NORM, (R)UN-OFF,
 or (M)AN

TYPE: _____
 OFF-(C)YCLE, HOT-(G)AS,
 or (E)LEC

TERM. TYPE: _____
 (N)ONE, (S)ENSE,
 (O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
 (00:00 - 23:59)
 or (N)ONE 4 _____ 5 _____ 6 _____

DURATION: _____
 (0-240 MIN)

RUN-OFF: _____
 (0-60 MIN)

TERM. POINT: _____
 (-50 TO 99 F)

DEFROST SET POINTS CONT'D.

CIRCUIT #: 18

NAME: _____
(15 CHARACTER LIMIT)STATUS _____:
(N)NORM, (R)UN-OFF,
or (M)ANTYPE: _____
OFF-(C)YCLE, HOT-(G)AS,
or (E)LECTERM. TYPE: _____
(N)ONE, (S)ENSE,
(O)PEN, or (C)LSDSTART TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____DURATION: _____
(0-240 MIN)RUN-OFF: _____
(0-60 MIN)TERM. POINT: _____
(-50 TO 99 F)

CIRCUIT #: 19

NAME: _____
(15 CHARACTER LIMIT)STATUS _____:
(N)NORM, (R)UN-OFF,
or (M)ANTYPE: _____
OFF-(C)YCLE, HOT-(G)AS,
or (E)LECTERM. TYPE: _____
(N)ONE, (S)ENSE,
(O)PEN, or (C)LSDSTART TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____DURATION: _____
(0-240 MIN)RUN-OFF: _____
(0-60 MIN)TERM. POINT: _____
(-50 TO 99 F)

CIRCUIT #: 20

NAME: _____
(15 CHARACTER LIMIT)STATUS _____:
(N)NORM, (R)UN-OFF,
or (M)ANTYPE: _____
OFF-(C)YCLE, HOT-(G)AS,
or (E)LECTERM. TYPE: _____
(N)ONE, (S)ENSE,
(O)PEN, or (C)LSDSTART TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____DURATION: _____
(0-240 MIN)RUN-OFF: _____
(0-60 MIN)TERM. POINT: _____
(-50 TO 99 F)

DEFROST SET POINTS CONT'D.

CIRCUIT #: 21 **NAME:** _____
(15 CHARACTER LIMIT)

STATUS _____: **DURATION:** _____
(N)NORM, (R)UN-OFF, (0-240 MIN)
or (M)AN

TYPE: _____ **RUN-OFF:** _____
OFF-(C)YCLE, HOT-(G)AS, (0-60 MIN)
or (E)LEC

TERM. TYPE: _____ **TERM. POINT:** _____
(N)ONE, (S)ENSE, (-50 TO 99 F)
(O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____

CIRCUIT #: 22 **NAME:** _____
(15 CHARACTER LIMIT)

STATUS _____: **DURATION:** _____
(N)NORM, (R)UN-OFF, (0-240 MIN)
or (M)AN

TYPE: _____ **RUN-OFF:** _____
OFF-(C)YCLE, HOT-(G)AS, (0-60 MIN)
or (E)LEC

TERM. TYPE: _____ **TERM. POINT:** _____
(N)ONE, (S)ENSE, (-50 TO 99 F)
(O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____

CIRCUIT #: 23 **NAME:** _____
(15 CHARACTER LIMIT)

STATUS _____: **DURATION:** _____
(N)NORM, (R)UN-OFF, (0-240 MIN)
or (M)AN

TYPE: _____ **RUN-OFF:** _____
OFF-(C)YCLE, HOT-(G)AS, (0-60 MIN)
or (E)LEC

TERM. TYPE: _____ **TERM. POINT:** _____
(N)ONE, (S)ENSE, (-50 TO 99 F)
(O)PEN, or (C)LSD

START TIMES: 1 _____ 2 _____ 3 _____
(00:00 - 23:59)
or (N)ONE 4 _____ 5 _____ 6 _____

H. SENSOR CONTROL

MAIN MENU

[4] SENSOR CONTROL

[2] SETUP

#:01 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____:_____:

(RANGE: 00:00:00 - 99:99:99)

#:02 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____:_____:

(RANGE: 00:00:00 - 99:99:99)

#:03 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____:_____:

(RANGE: 00:00:00 - 99:99:99)

#:04 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____:_____:

(RANGE: 00:00:00 - 99:99:99)

SENSOR CONTROL - SETUP CONT'D.

#:05 STATUS: **NAME:** _____
 (15 CHARACTER LIMIT)
TYPE: _____ (T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
 (ENTER LETTER) (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,
USING: _____ 000, _____ 000, _____ 000 _____
 (O)NLY, (A)VG, (0-48) (0-48) (0-48)
 MA(X), or MI(N)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____
 (RANGE: 00:00:00 - 99:99:99)

#:06 STATUS: **NAME:** _____
 (15 CHARACTER LIMIT)
TYPE: _____ (T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
 (ENTER LETTER) (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,
USING: _____ 000, _____ 000, _____ 000 _____
 (O)NLY, (A)VG, (0-48) (0-48) (0-48)
 MA(X), or MI(N)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____
 (RANGE: 00:00:00 - 99:99:99)

#:07 STATUS: **NAME:** _____
 (15 CHARACTER LIMIT)
TYPE: _____ (T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
 (ENTER LETTER) (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,
USING: _____ 000, _____ 000, _____ 000 _____
 (O)NLY, (A)VG, (0-48) (0-48) (0-48)
 MA(X), or MI(N)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____
 (RANGE: 00:00:00 - 99:99:99)

#:08 STATUS: **NAME:** _____
 (15 CHARACTER LIMIT)
TYPE: _____ (T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
 (ENTER LETTER) (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,
USING: _____ 000, _____ 000, _____ 000 _____
 (O)NLY, (A)VG, (0-48) (0-48) (0-48)
 MA(X), or MI(N)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____
 (RANGE: 00:00:00 - 99:99:99)

#:09 STATUS: **NAME:** _____
 (15 CHARACTER LIMIT)
TYPE: _____ (T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
 (ENTER LETTER) (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,
USING: _____ 000, _____ 000, _____ 000 _____
 (O)NLY, (A)VG, (0-48) (0-48) (0-48)
 MA(X), or MI(N)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____ (RANGE: 00:00:00 - 99:99:99)

SENSOR CONTROL - SETUP CONT'D.

#10 STATUS:

NAME:

(15 CHARACTER LIMIT)

TYPE:

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING:

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): : :

(RANGE: 00:00:00 - 99:99:99)

#11 STATUS:

NAME:

(15 CHARACTER LIMIT)

TYPE:

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING:

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): : :

(RANGE: 00:00:00 - 99:99:99)

#12 STATUS:

NAME:

(15 CHARACTER LIMIT)

TYPE:

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING:

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): : :

(RANGE: 00:00:00 - 99:99:99)

#13 STATUS:

NAME:

(15 CHARACTER LIMIT)

TYPE:

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING:

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): : :

(RANGE: 00:00:00 - 99:99:99)

#14 STATUS:

NAME:

(15 CHARACTER LIMIT)

TYPE:

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING:

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): : :

(RANGE: 00:00:00 - 99:99:99)

SENSOR CONTROL - SETUP CONT'D.

#:15 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#:16 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#:17 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#:18 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#:19 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____ (RANGE: 00:00:00 - 99:99:99)

SENSOR CONTROL - SETUP CONT'D.

#20 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____
(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____:_____:

(RANGE: 00:00:00 - 99:99:99)

#21 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____
(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____:_____:

(RANGE: 00:00:00 - 99:99:99)

#22 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____
(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____:_____:

(RANGE: 00:00:00 - 99:99:99)

#23 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____
(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____:_____:

(RANGE: 00:00:00 - 99:99:99)

#24 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____
(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____:_____:

(RANGE: 00:00:00 - 99:99:99)

SENSOR CONTROL - SETUP CONT'D.

#25 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#26 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#27 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#28 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#29 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____ (RANGE: 00:00:00 - 99:99:99)

SENSOR CONTROL - SETUP CONT'D.

#30 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____
(ENTER LETTER)(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,
MA(X), or MI(N)

(0-48)

(0-48)

(0-48)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#31 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____
(ENTER LETTER)(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,
MA(X), or MI(N)

(0-48)

(0-48)

(0-48)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#32 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____
(ENTER LETTER)(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,
MA(X), or MI(N)

(0-48)

(0-48)

(0-48)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#33 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____
(ENTER LETTER)(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,
MA(X), or MI(N)

(0-48)

(0-48)

(0-48)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#34 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____
(ENTER LETTER)(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,
MA(X), or MI(N)

(0-48)

(0-48)

(0-48)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____ (RANGE: 00:00:00 - 99:99:99)

SENSOR CONTROL - SETUP CONT'D.

#35 STATUS: **NAME:** _____
 (15 CHARACTER LIMIT)
TYPE: _____ (T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
 (ENTER LETTER) (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,
USING: _____ 000, _____ 000, _____ 000 _____
 (O)NLY, (A)VG, (0-48) (0-48) (0-48)
 MA(X), or MI(N)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____
 (RANGE: 00:00:00 - 99:99:99)

#36 STATUS: **NAME:** _____
 (15 CHARACTER LIMIT)
TYPE: _____ (T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
 (ENTER LETTER) (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,
USING: _____ 000, _____ 000, _____ 000 _____
 (O)NLY, (A)VG, (0-48) (0-48) (0-48)
 MA(X), or MI(N)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____
 (RANGE: 00:00:00 - 99:99:99)

#37 STATUS: **NAME:** _____
 (15 CHARACTER LIMIT)
TYPE: _____ (T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
 (ENTER LETTER) (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,
USING: _____ 000, _____ 000, _____ 000 _____
 (O)NLY, (A)VG, (0-48) (0-48) (0-48)
 MA(X), or MI(N)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____
 (RANGE: 00:00:00 - 99:99:99)

#38 STATUS: **NAME:** _____
 (15 CHARACTER LIMIT)
TYPE: _____ (T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
 (ENTER LETTER) (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,
USING: _____ 000, _____ 000, _____ 000 _____
 (O)NLY, (A)VG, (0-48) (0-48) (0-48)
 MA(X), or MI(N)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____
 (RANGE: 00:00:00 - 99:99:99)

#39 STATUS: **NAME:** _____
 (15 CHARACTER LIMIT)
TYPE: _____ (T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,
 (ENTER LETTER) (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,
USING: _____ 000, _____ 000, _____ 000 _____
 (O)NLY, (A)VG, (0-48) (0-48) (0-48)
 MA(X), or MI(N)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____ (RANGE: 00:00:00 - 99:99:99)

SENSOR CONTROL - SETUP CONT'D.

#40 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#41 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#42 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#43 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____

(RANGE: 00:00:00 - 99:99:99)

#44 STATUS:

NAME: _____

(15 CHARACTER LIMIT)

TYPE: _____

(ENTER LETTER)

(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK,

(H)UM, (D)IG. (L)INEAR, or L(Q)LEV,

USING: _____

000, _____

000, _____

000 _____

(O)NLY, (A)VG,

(0-48)

(0-48)

(0-48)

MA(X), or MI(N)

LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____ (RANGE: 00:00:00 - 99:99:99)

SENSOR CONTROL - SETUP CONT'D.

#:45 STATUS:		NAME: _____ (15 CHARACTER LIMIT)	
TYPE: _____ (ENTER LETTER)	(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK, (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,		
USING: _____ (O)NLY, (A)VG, MA(X), or MI(N)	000, _____ (0-48)	000, _____ (0-48)	000 _____ (0-48)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____ (RANGE: 00:00:00 - 99:99:99)			

#:46 STATUS:		NAME: _____ (15 CHARACTER LIMIT)	
TYPE: _____ (ENTER LETTER)	(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK, (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,		
USING: _____ (O)NLY, (A)VG, MA(X), or MI(N)	000, _____ (0-48)	000, _____ (0-48)	000 _____ (0-48)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____ (RANGE: 00:00:00 - 99:99:99)			

#:47 STATUS:		NAME: _____ (15 CHARACTER LIMIT)	
TYPE: _____ (ENTER LETTER)	(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK, (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,		
USING: _____ (O)NLY, (A)VG, MA(X), or MI(N)	000, _____ (0-48)	000, _____ (0-48)	000 _____ (0-48)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____ (RANGE: 00:00:00 - 99:99:99)			

#:48 STATUS:		NAME: _____ (15 CHARACTER LIMIT)	
TYPE: _____ (ENTER LETTER)	(T)EMP, (1)00, (2)00, (5)00, (R)EF.LEAK, (H)UM, (D)IG. (L)INEAR, or L(Q)LEV,		
USING: _____ (O)NLY, (A)VG, MA(X), or MI(N)	000, _____ (0-48)	000, _____ (0-48)	000 _____ (0-48)
LOGGING INTERVAL (HH:MM:SS): _____ : _____ : _____ (RANGE: 00:00:00 - 99:99:99)			

MAIN MENU**[4] SENSOR CONTROL****[3] SETPOINTS**

NO.:01 STATUS: OFF	NAME:2ND TRANSDUCER	
TYPE:100LB	ENG. UNIT	LB
CURRENT VALUES:	000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____
(TMP:-50to270	(0-240 SEC)	(TMP:-50to270
PRS:50-499)(OCN)		PRS:50-499)(OCN)
		DLY: _____
		(0-240 SEC)

NO.:02 STATUS: OFF	NAME:3RD TRANSDUCER	
TYPE:100LB	ENG. UNIT	LB
CURRENT VALUES:	000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____
(TMP:-50to270	(0-240 SEC)	(TMP:-50to270
PRS:50-499)(OCN)		PRS:50-499)(OCN)
		DLY: _____
		(0-240 SEC)

NO.:03 STATUS: OFF	NAME:AIR TEMP	
TYPE:TEMP	ENG. UNIT	F
CURRENT VALUES:	000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____
(TMP:-50to270	(0-240 SEC)	(TMP:-50to270
PRS:50-499)(OCN)		PRS:50-499)(OCN)
		DLY: _____
		(0-240 SEC)

NO.:04 STATUS: OFF	NAME:AIR TEMP	
TYPE:TEMP	ENG. UNIT	F
CURRENT VALUES:	000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____
(TMP:-50to270	(0-240 SEC)	(TMP:-50to270
PRS:50-499)(OCN)		PRS:50-499)(OCN)
		DLY: _____
		(0-240 SEC)

NO.:05 STATUS: OFF	NAME:AIR TEMP	
TYPE:TEMP	ENG. UNIT	F
CURRENT VALUES:	000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____
(TMP:-50to270	(0-240 SEC)	(TMP:-50to270
PRS:50-499)(OCN)		PRS:50-499)(OCN)
		DLY: _____
		(0-240 SEC)

NO.:06 STATUS: OFF	NAME:AIR TEMP	
TYPE:TEMP	ENG. UNIT	F
CURRENT VALUES:	000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____
(TMP:-50to270	(0-240 SEC)	(TMP:-50to270
PRS:50-499)(OCN)		PRS:50-499)(OCN)
		DLY: _____
		(0-240 SEC)

SENSOR CONTROL - SETPOINTS CONT'D.

NO.:07 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:08 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:09 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:10 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:11 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:12 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

SENSOR CONTROL - SETPOINTS CONT'D.

NO.:13 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

NO.:14 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

NO.:15 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

NO.:16 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

NO.:17 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

NO.:12 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

SENSOR CONTROL - SETPOINTS CONT'D.

NO.:18 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:19 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:20 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:21 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:22 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:23 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:		000 OF 000 000 000 000	
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

SENSOR CONTROL - SETPOINTS CONT'D.

NO.:24 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

NO.:25 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

NO.:26 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

NO.:27 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

NO.:28 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

NO.:29 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

SENSOR CONTROL - SETPOINTS CONT'D.

NO.:30 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT	F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:31 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT	F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:32 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT	F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:33 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT	F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:34 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT	F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:35 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT	F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

SENSOR CONTROL - SETPOINTS CONT'D.

NO.:37 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:37 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:38 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:39 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:40 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:41 STATUS: OFF		NAME: AIR TEMP	
TYPE: TEMP		ENG. UNIT F	
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

SENSOR CONTROL - SETPOINTS CONT'D.

NO.:42 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:43 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:44 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:45 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:46 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

NO.:47 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP: -50to270	(0-240 SEC)	(TMP: -50to270	(0-240 SEC)
PRS: 50-499)(OCN)		PRS: 50-499)(OCN)	

SENSOR CONTROL - SETPOINTS CONT'D.

NO.:48 STATUS: OFF	NAME: AIR TEMP		
TYPE: TEMP	ENG. UNIT F		
CURRENT VALUES:	000 OF 000 000 000 000		
ON @: _____	DL: _____	OFF @: _____	DLY: _____
(TMP:-50to270	(0-240 SEC)	(TMP:-50to270	(0-240 SEC)
PRS:50-499)(OCN)		PRS:50-499)(OCN)	

I. ALARMS

MAIN MENU

[1] PRESSURE CONTROL

[3] ALARMS

GRP1 PRESSURE ALARMS SETUP-

HIGH SUCT: _____	DLY: _____	DCHG ALM: _____	
(O-99.9)	(0-240 MIN)	(Y)ES or (N)O?	
LOW SUCT: _____	DLY: _____		
(O-99.9)	(0-240 MIN)		
PUMP DOWN: _____	DLY: _____		
(O-99.9)	(0-240 SEC)		
CASE 1H _____	2H _____	3H _____	4H _____
TEMPS: 1L _____	2L _____	3L _____	4L _____
(-50 TO 99, (N)ONE, (O)PEN, or (C)LSD			

GRP1 PRESSURE ALARMS SETUP-

LOGGING INTERVAL: _____	:	:	RANGE (00:00:00-99:99:99)
ALARM TYPES:	SUCTION	:	DISCHARGE
(A)LARM or	PUMP DOWN	:	CASE
(N)OTICE	PHASE	:	
	OIL FAIL	:	

GRP2 PRESSURE ALARMS SETUP-

HIGH SUCT: _____	DLY: _____	DCHG ALM: _____	
(O-99.9)	(0-240 MIN)	(Y)ES or (N)O?	
LOW SUCT: _____	DLY: _____		
(O-99.9)	(0-240 MIN)		
PUMP DOWN: _____	DLY: _____		
(O-99.9)	(0-240 SEC)		
CASE 1H _____	2H _____	3H _____	4H _____
TEMPS: 1L _____	2L _____	3L _____	4L _____
(-50 TO 99, (N)ONE, (O)PEN, or (C)LSD			

GRP2 PRESSURE ALARMS SETUP-

ALARM TYPES:	SUCTION	:	
(A)LARM or	PUMP DOWN	:	CASE
(N)OTICE		:	

ALARMS CONT'D.

MAIN MENU

[4] SENSOR CONTROL

[4] ALARMS

NO.: 01 NAME: 2ND TRANSDUCER
 TYPE: 100LB ENG. UNIT: LB
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50 to 999, (O-240 MIN)
 (N) ONE, (C) LSD,
 or (O) PN)

NO.: 02 NAME: 3RD TRANSDUCER
 TYPE: 100LB ENG. UNIT: LB
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50 to 999, (O-240 MIN)
 (N) ONE, (C) LSD,
 or (O) PN)

NO.: 03 NAME: AIR TEMP
 TYPE: TEMP ENG. UNIT: F
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50 to 999, (O-240 MIN)
 (N) ONE, (C) LSD,
 or (O) PN)

NO.: 04 NAME: AIR TEMP
 TYPE: TEMP ENG. UNIT: F
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50 to 999, (O-240 MIN)
 (N) ONE, (C) LSD,
 or (O) PN)

NO.: 05 NAME: AIR TEMP
 TYPE: TEMP ENG. UNIT: F
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50 to 999, (O-240 MIN)
 (N) ONE, (C) LSD,
 or (O) PN)

SENSOR ALARMS CONT'D.

NO.: 06 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 07 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.:08 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 09 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 10 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 11 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

SENSOR ALARMS CONT'D.

NO.: 12 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999,
 (N)ONE, (C)LSD,
 or (O)PN)

NO.: 13 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999,
 (N)ONE, (C)LSD,
 or (O)PN)

NO.: 14 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999,
 (N)ONE, (C)LSD,
 or (O)PN)

NO.: 15 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999,
 (N)ONE, (C)LSD,
 or (O)PN)

NO.: 16 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999,
 (N)ONE, (C)LSD,
 or (O)PN)

NO.: 17 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999,
 (N)ONE, (C)LSD,
 or (O)PN)

SENSOR ALARMS CONT'D.

NO.: 18 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 19 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 20 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 21 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 22 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 23 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

SENSOR ALARMS CONT'D.

NO.: 24 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 25 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 26 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 27 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 28 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 29 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

SENSOR ALARMS CONT'D.

NO.: 30 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 31 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 32 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 33 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 34 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 35 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

SENSOR ALARMS CONT'D.

NO.: 36 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999, (N)ONE, (C)LSD, or (O)PN)
 (O-240 MIN)

NO.: 37 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999, (N)ONE, (C)LSD, or (O)PN)
 (O-240 MIN)

NO.:38 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999, (N)ONE, (C)LSD, or (O)PN)
 (O-240 MIN)

NO.: 39 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999, (N)ONE, (C)LSD, or (O)PN)
 (O-240 MIN)

NO.: 40 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999, (N)ONE, (C)LSD, or (O)PN)
 (O-240 MIN)

NO.: 41 NAME: AIR TEMP
 TYPE:TEMP
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50to999, (N)ONE, (C)LSD, or (O)PN)
 (O-240 MIN)

SENSOR ALARMS CONT'D.

NO.: 42 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 43

NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 44 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 45 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 46 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

NO.: 47 NAME: AIR TEMP

TYPE:TEMP

ENG. UNIT: F

ALARMS: HIGH _____

LOW: _____

DLY: _____

Notices: HIGH _____

LOW: _____

DLY: _____

(-50to999,
(N)ONE, (C)LSD,
or (O)PN)

(O-240 MIN)

SENSOR ALARMS CONT'D.

NO.: 50 NAME: AIR TEMP
 TYPE: TEMP ENG. UNIT: F
 ALARMS: HIGH _____ LOW: _____ DLY: _____
 Notices: HIGH _____ LOW: _____ DLY: _____
 (-50 to 999,
 (N)ONE, (C)LSD,
 or (O)PN) (0-240 MIN)

J. SYSTEM INFORMATION

MAIN MENU

[7] CONFIGURATION

[3] SYSTEM INFORMATION

UNIT NAME: _____
 (25 CHARACTER LIMIT)

DATE: ____/____/____/ TIME: _____ DAY: _____
 (ENTER DATE) (RANGE: 00:00-24:00) (FIRST 3 CHARACTERS ONLY)
 PASSWORDS: #1: _____ #3: _____
 (6 CHARACTER LIMIT) #2: _____ #4: _____

PHONE NUMBER #1: ____ - ____ - _____
 (ENTER PHONE #2: ____ - ____ - _____
 NUMBER)

DAYLIGHT SAVINGS MODE: AUTOMATIC (USA)
 (1)AUTO, (2)MANUAL,
 or (3)NONE

DST MANUAL SET START: 04/07/91
 DST MANUAL SET END : 10/27/91
 (SET DATE IF
 IN MANUAL MODE)

K. REMOTE COMMUNICATIONS

MAIN MENU

[7] CONFIGURATION

[4] REMOTE COMMUNICATIONS

UNIT #: _____
 (ENTER TRC UNIT #)
 PRIMARY RS-232 PORT PROTOCOL:
 BAUD: 1200 PARITY: N
 (N)ONE, (E)VEN,
 or (O)DD

SECONDARY RS-232 PORT PROTOCOL:
 BAUD: 9600 PARITY: E

[LEAVE PRIMARY & SECONDARY
 AS IS UNLESS CPC ENGINEERING
 ADVISES]

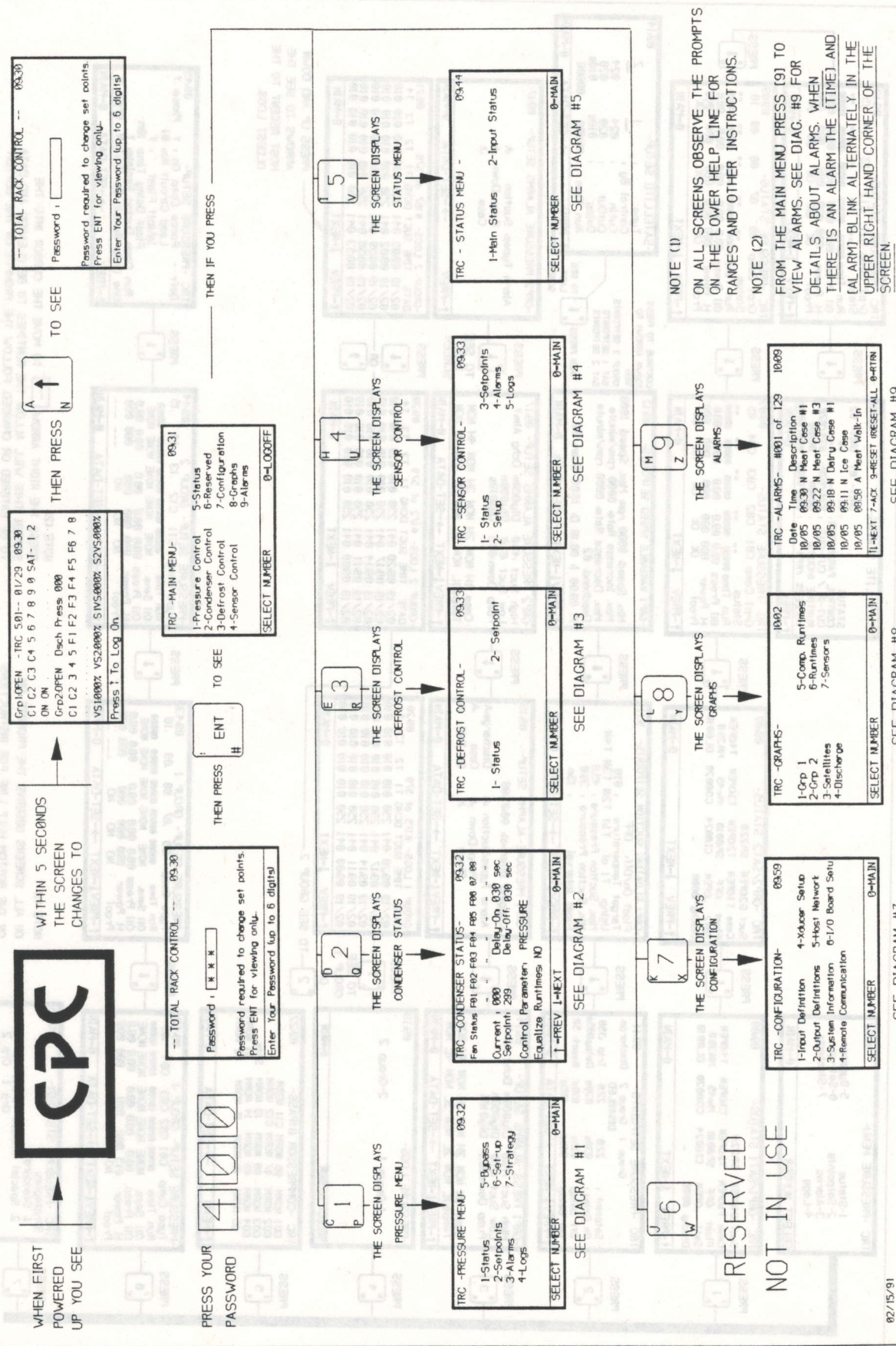
DATA BITS: 8
 (7 or 8)

DATA BITS: 7

APPENDIX C

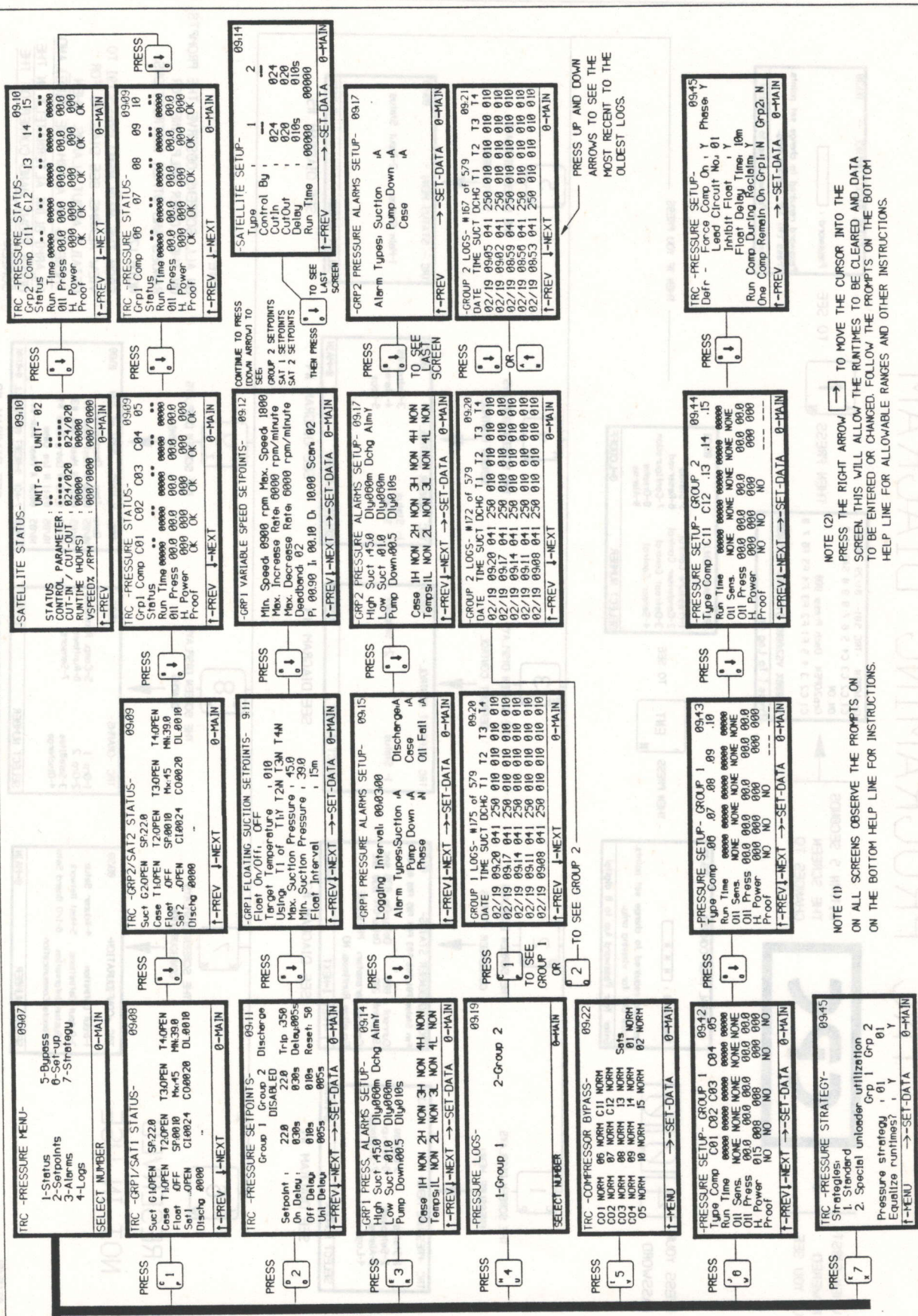
TRC PROGRAMMING SCREENS

TRC PROGRAMING DIAGRAM



02/15/91

#1 Pressure Control Diagram



TRC -CONDENSER STATUS-	10:05
Fans:F01 F02 F03 F04 F05 F06 07 08	
.. ON ON ON ..	
Current:200	Delay--On: 030sec
Setpoint:200	Delay-Off: 030sec
Control Parameter: PRESSURE	
Equalize Runtimes: NO	
↑=PREV ↓=NEXT	0=MAIN

SEE NOTE (1) & (2)

-CONDENSER SETPOINTS-	10:09
#Fans:6	Deadband:10 Delay--On: 030s
	Setpoint:200 Delay-Off: 030s
Fast Recovery- PSI	Above Setpt: 15
Fast Recovery-Delay	Between Fans:006s
Control Parameter: PRESSURE	
Equalize Runtimes : Y	
↑=PREV ↓=NEXT →=SET-DATA	0=MAIN

SEE NOTE (1) & (2)

-CONDENSER RUNTIMES-	10:12
Fan # F01 F02	F03 F04
Status .. ON	ON ..
Runtime 00000	00000
Fan # F05 F06	F07 F08
Status ..	..
Runtime 00000	00000
↑-PREV →=SET-DATA	0=MAIN

SEE NOTE (1) & (2)

PRESS
B ↓
0

PRESS
B ↓
0

NOTE (1)

PRESS THE RIGHT ARROW → TO MOVE THE CURSOR INTO THE SCREEN TO CLEAR RUNTIMES AND TO ENTER OR CHANGE DATA. FOLLOW THE PROMPTS ON THE BOTTOM HELP LINE FOR ALLOWABLE RANGES AND OTHER INSTRUCTIONS.

NOTE (2)

TO SEE AN ALARM LOG PRESS [9] AT MAIN MENU. WHEN THERE IS AN ALARM THE [TIME] AND [ALARM] BLINK ALTERNATELY IN THE UPPER RIGHT HAND CORNER OF THE SCREEN.

02/15/91

TRC -DEFROST CONTROL- 09:33

1-Status 2-Setpoint

SELECT NUMBER 0=Main

TRC -DEFROST STATUS- 09:34

#	Name	ST	Typ	Time	Temp	Icm
01		N	CYC	000	NON	000
02		N	CYC	000	NON	000
03		N	CYC	000	NON	000
04		N	CYC	000	NON	000
05		N	CYC	000	NON	000

↑=PREV ↓=NEXT 0=MENU

TRC -DEFROST CONTROL- 09:34

1-Status 2-Setpoint

Defrost circuit number: (1) 1

SELECT NUMBER 0=MAIN

TRC -DEFROST SETPOINTS- 09:36

Circuit # 01 Name:

Status: Nor Duration: 000m

Type: CYC Run-off: 000

Term. Point: 000

Start Times: 1-NONE 2-NONE 3-NONE 4-NONE 5-NONE 6-NONE

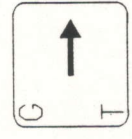
↑=PREV ↓=NEXT →=SET-DATA 0=MENU

THEN PRESS

ENT

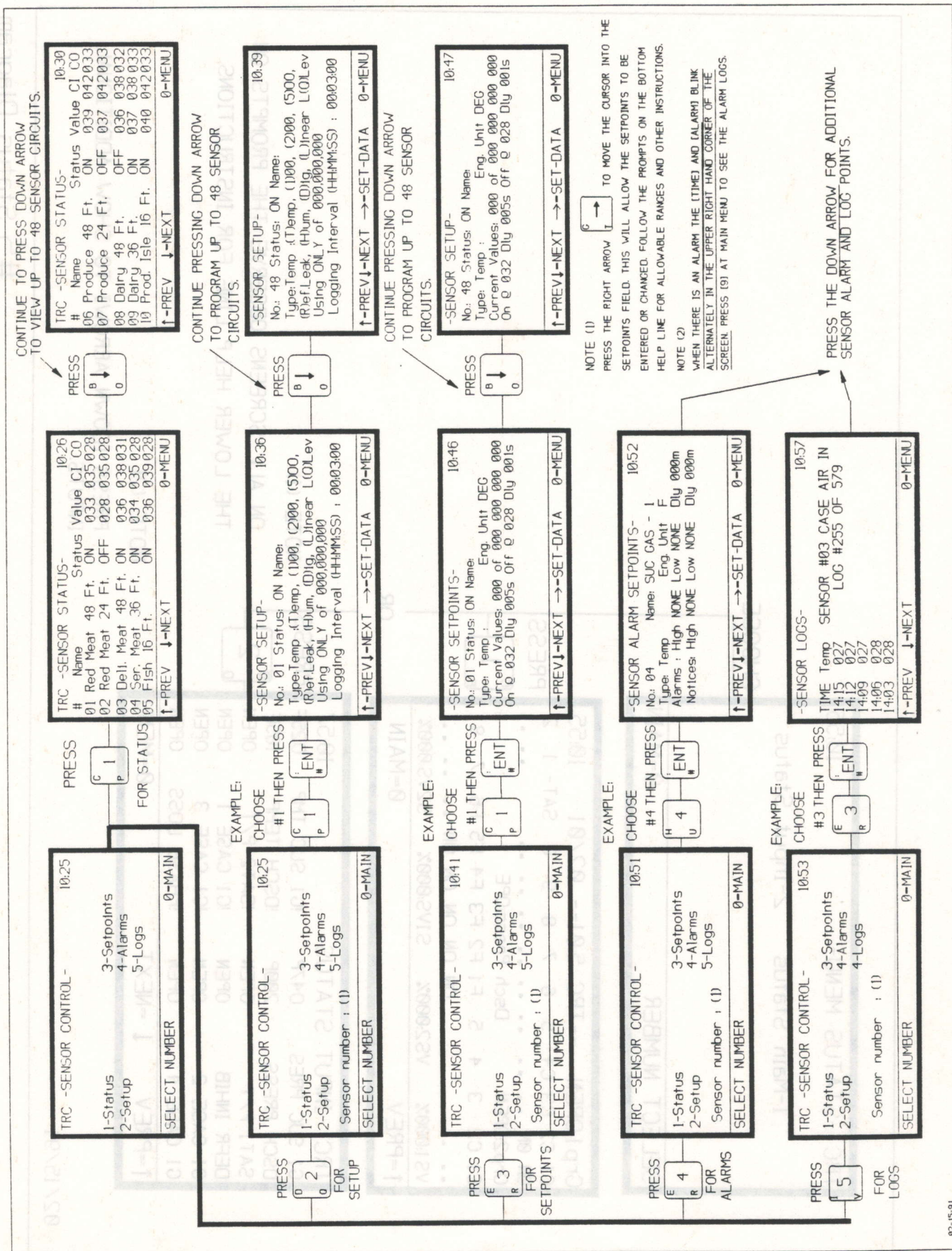
TO SEE SETPOINTS FOR CIRCUIT #1

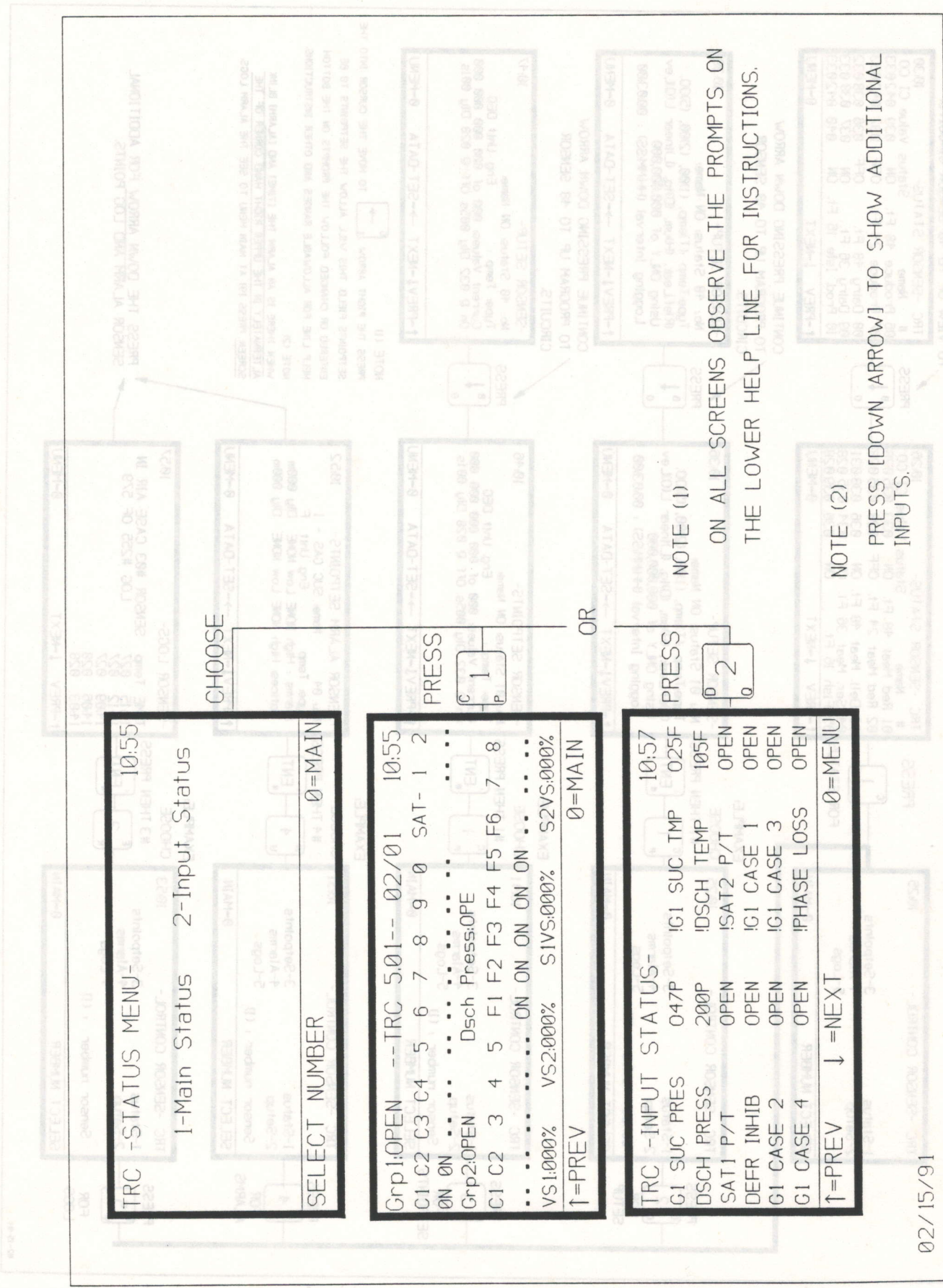
CONTINUE TO PRESS 0 TO SEE UP TO 23 CIRCUITS.



NOTE (1): PRESS C TO ENTER CURSOR ONTO SCREEN. THIS ALLOWS RUNTIMES TO BE CLEARED AND TO ENTER OR CHANGE DATA OBSERVE THE BOTTOM HELP LINE FOR ALLOWABLE RANGES OR OTHER INSTRUCTIONS. THERE IS A TOTAL OF 23 CIRCUITS POSSIBLE. PRESS THE UP AND DOWN ARROWS TO GO TO HIGHER OR LOWER CIRCUIT NUMBERS.

NOTE (2): A CIRCUIT MAY BE MANUALLY DEFROSTED BY CHANGING ITS STATUS TO "M" (MANUAL) IN THE SETPOINTS SCREEN. PRESS [RED] THEN [M] WITH CURSOR OVER STATUS.

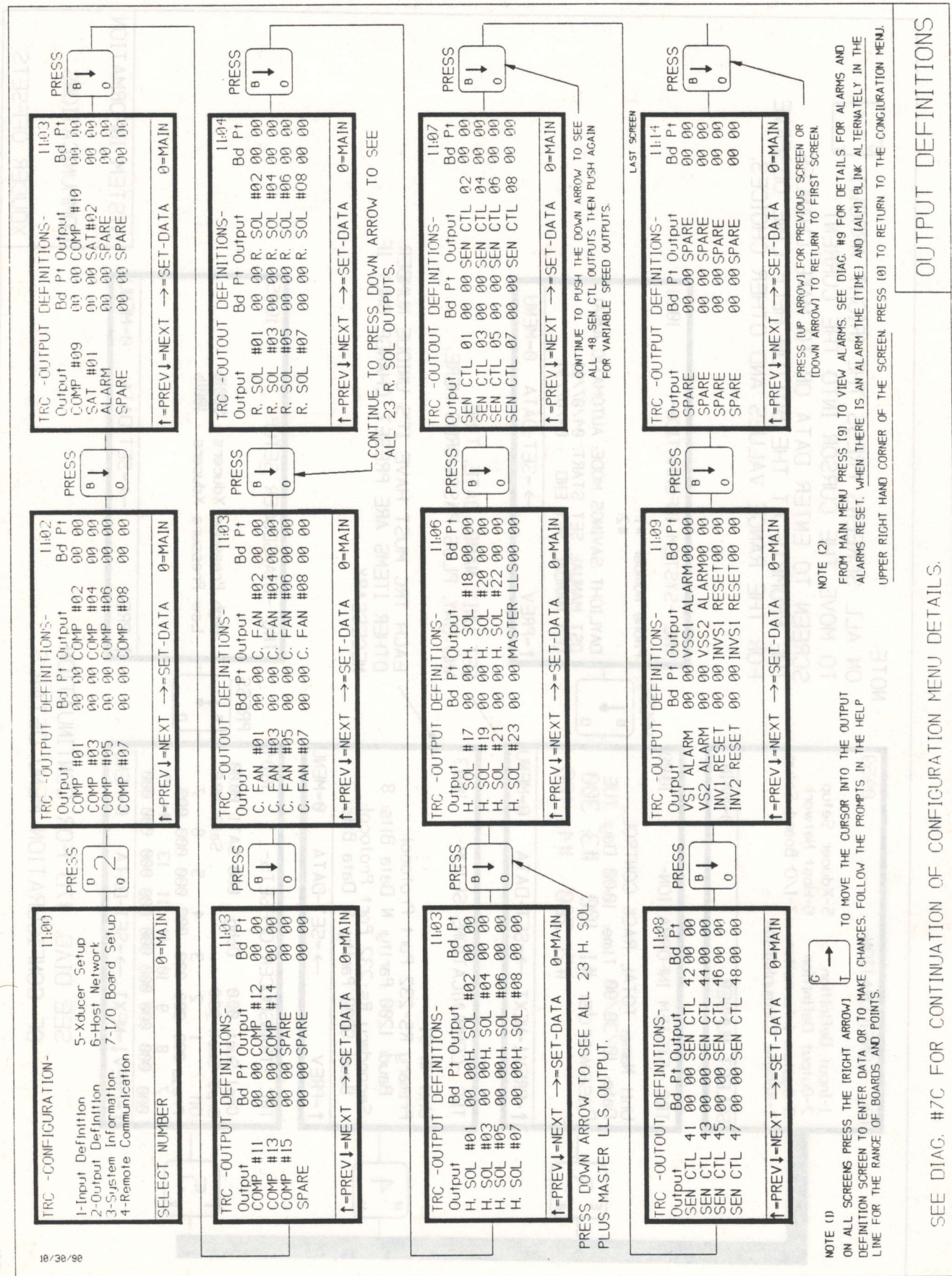




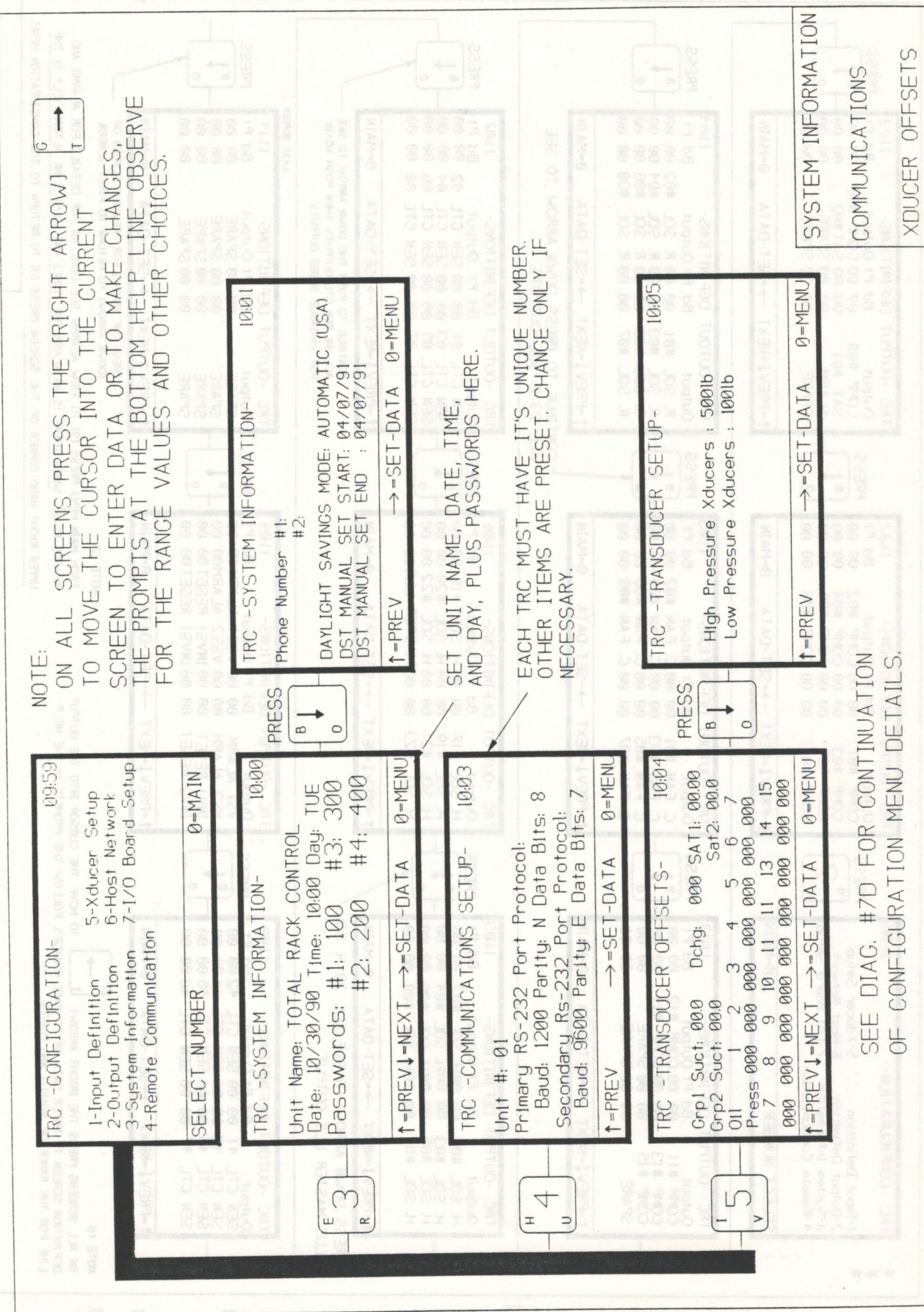
INITIAL DESTINATIONS

SEE DIAL FOR CONTINUATION OF CONFIGURATION

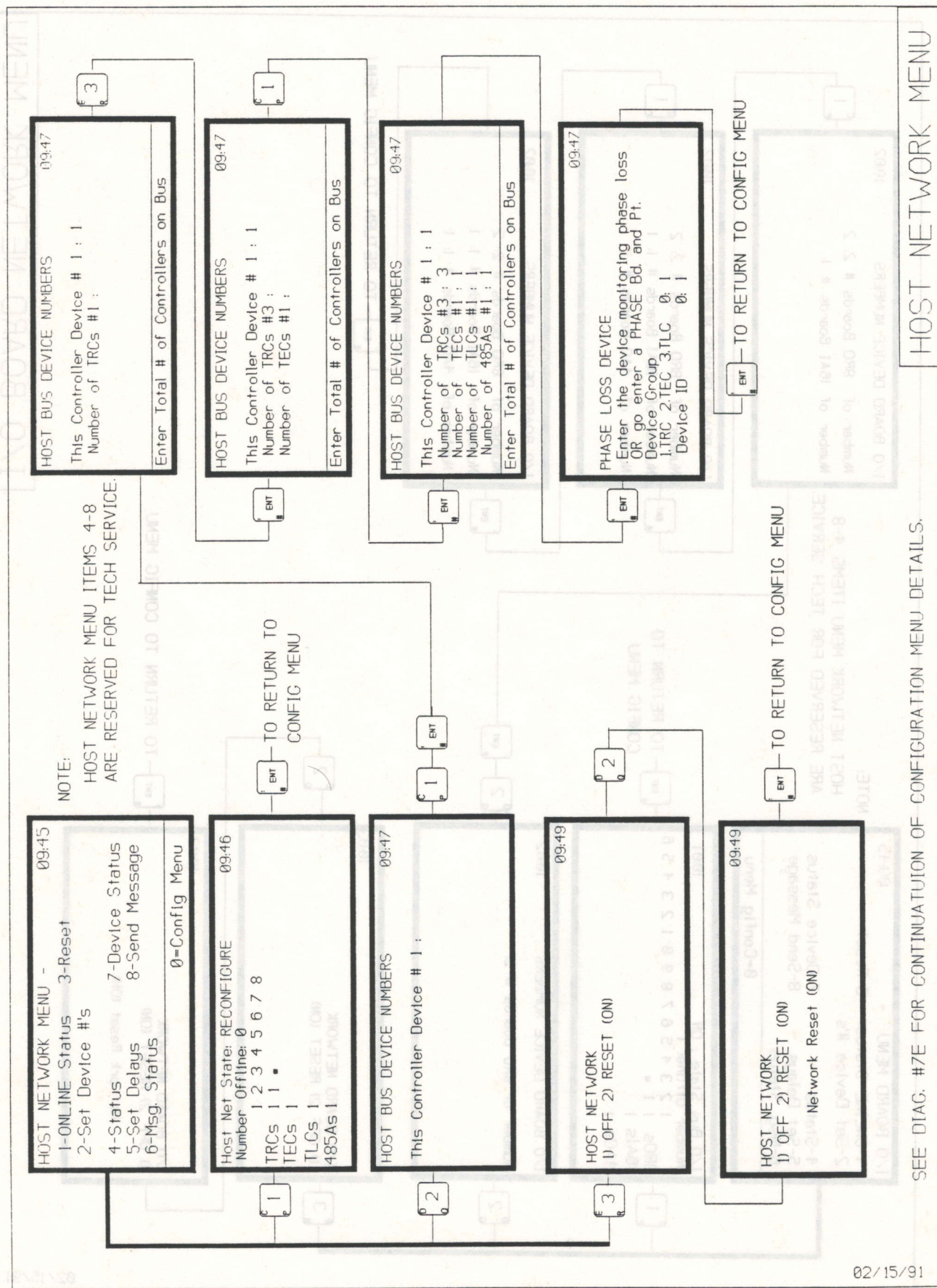




#7 Configuration Part B Diagram



SEE DIAG. #7D FOR CONTINUATION
OF CONFIGURATION MENU DETAILS.

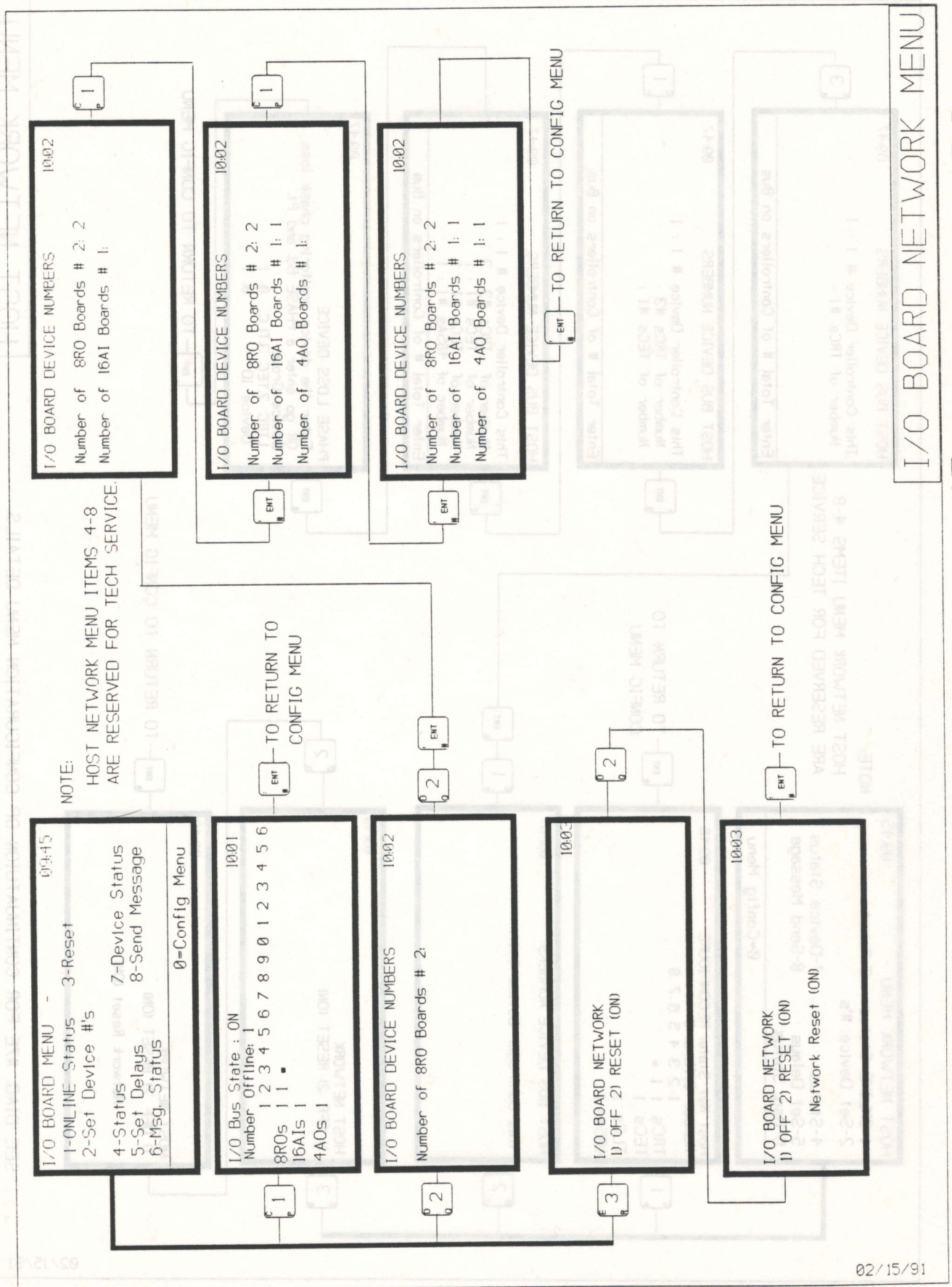


02/15/91

SEE DIAG. #7E FOR CONTINUATION OF CONFIGURATION MENU DETAILS.

HOST NETWORK MENU

#7 Configuration Part D Diagram

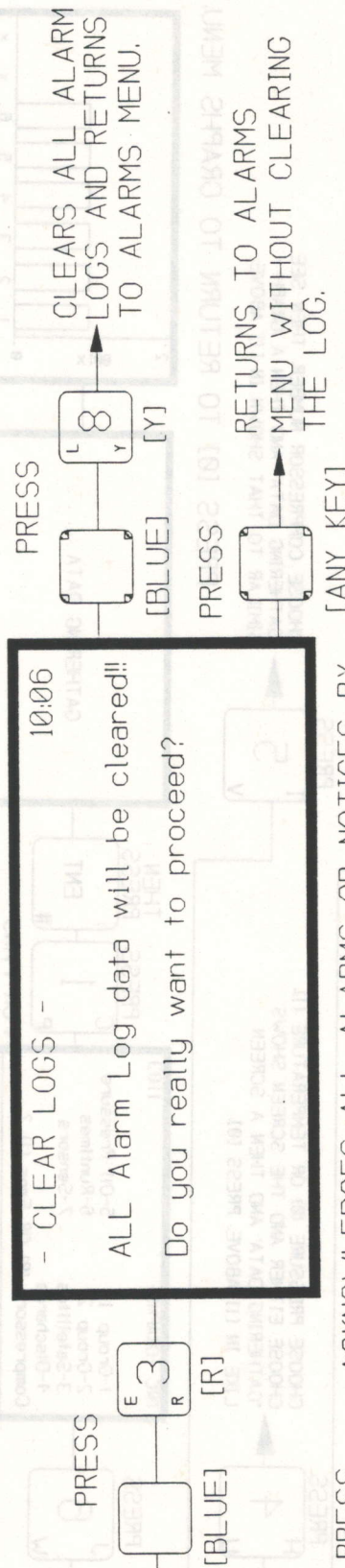


02/15/91

#7 Configuration Part E Diagram

02/15/91

TRC -ALARMS- #000 of 129 11:05		
Date	Time	Description
11/03	16:32	A* GAS LEAK
11/03	12:22	N* PROD CASE #1
11/03	11:42	A* ICE CREAM
00/00	00:00	N
00/00	00:00	N
↑=NEXT 7=ACK 9=RESET (R)RESET-ALL 0=MAIN		



ACKNOWLEDGES ALL ALARMS OR NOTICES BY REMOVING THE ASTERISKS. IF THE ALARM OR NOTICE RE-OCCURS IT WILL NOT BE LOGGED AGAIN. "ALARM" CONTINUES TO BLINK IN UPPER RIGHT CORNER.

RESETS ALL ALARMS OR NOTICES BY REMOVING THE ASTERISKS. IF THE ALARM OR NOTICE RE-OCCURS IT WILL BE LOGGED AGAIN. REMOVES BLINKING "ALARM" IN UPPER RIGHT CORNER.

DEFINITIONS

- A = Alarm
- AL = Alarms
- Dchtrip = Discharge Press. Trip
- Grp = Group
- Level = Liquid Level
- N = Notice
- Oil = Oil Pressure
- OP or OPN = Open
- Phase = Phase Loss
- PmpDn = Pump Down
- Prf = Run Proof
- Sens = Temperature Sensor
- SH or SHO = Short
- VS = Variable Speed
- Xdcr = Pressure Transducer

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SOFTWARE RELEASE NOTICE

PRODUCT: TRC NEW REVISION: 5.01 RELEASE DATE: 5 MAR 91

1. SUMMARY: NEW FEATURES OF THIS SOFTWARE:

TRC 5.01 IS A MAJOR UPGRADE FROM PREVIOUS VERSIONS. THE EARLIER TOKEN RING NETWORK HAS BEEN IMPROVED AND REDESIGNED TO INCLUDE A TOKEN RING HOST NETWORK AND A MASTER/SLAVE EXPANSION NETWORK.

THE EXPANSION NETWORK IS COMPOSED OF A TRC AND ITS INPUT/OUTPUT EXPANSION BOARDS. EACH EXPANSION NETWORK INDEPENDENTLY SERVICES ITS 16AI, 8RO AND 4AO BOARDS. UNLIKE THE EARLIER TOKEN RING, THE NEW EXPANSION NETWORK IS CAPABLE OF VERY HIGH BAUD RATES, NOW RUNNING AT 9600.

THE HOST NETWORK IS COMPOSED OF TRCs AND AN ALARM BOX. ONE ALARM BOX HANDLES ALL EXPANSION NETWORK AND HOST NETWORK ALARMS. NO LONGER DOES EACH TRC REQUIRE ITS OWN ALARM BOX. THE NEW TOKEN RING HOST NETWORK IS MUCH MORE EFFICIENT SINCE IT IS DEDICATED TO THE TASK OF INTEGRATING ALL THE TRCs INTO ONE ORGANIC COMMUNICATION SYSTEM.

BECAUSE EACH NETWORK HAS ITS OWN DEDICATED TASK, THE NEW DESIGN MAXIMIZES RELIABILITY AND EFFICIENCY.

2. THE BAUD RATE SWITCH SETTINGS HAVE CHANGED. (0=OFF, DOWN; 1=UP, ON)

BAUD RATE	SWICHES	
-----	-----	
4800	0 0	EXPANSION NETWORK SWITCHES:
9600	1 0	[1 2 ON TRC; 6 7 ON 4AO, 16AI, OR 8RO]
19200	0 1	HOST NETWORK SWITCHES:
38400	1 1	[3 4 ON TRC; 6 7 ON THE ALARM BOX]

SWITCHES MUST BE SET FOR THE SAME BAUD RATE ON THE TRC AND THE EXPANSION BOARDS. WITH THE ABOVE ARRANGEMENT, THE SWITCHES WILL MATCH AND PHYSICALLY "LOOK" THE SAME.

2400 IS NOT USED ANYMORE. 38400 WILL BE NEEDED FOR FUTURE REQUIREMENTS.

NEW MASTER/SLAVE EXPANSION BOARDS OPERATE AT 9600.
THE HOST NETWORK, WHICH INCLUDES THE ALARM BOX, OPERATES AT 4800.

THEREFORE, THE FOLLOWING SETTINGS ARE REQUIRED!!!

- * TRC SWITCH, S1: 1 AND 5 UP, THE REST DOWN.
- * ALARM BOX SWITCH, S1: 1 UP, THE REST DOWN.
- * EXPANSION BOARD SWITCH: SET 1 THROUGH 5 FOR UNIT ID, 6 UP, THE REST DOWN.

3. THE NEW 5.01 HOST NETWORK HAS THE FOLLOWING MAXIMUM CAPABILITIES:

8	TRCs	(HOST NETWORK	TOKEN RING)
2	TECs	(HOST NETWORK	TOKEN RING)
2	TLCs	(HOST NETWORK	TOKEN RING)
1	485-ALARM	(HOST NETWORK	TOKEN RING)

EACH TRC HAS THE FOLLOWING MAXIMUM CAPABILITIES:

8	16AIs	(128 inputs	MASTER/SLAVE)
16	8ROs	(128 outputs	MASTER/SLAVE)
1	4AO	(4 outputs	MASTER/SLAVE)

4. EACH NEW EXPANSION BOARD HAS AN INITIALIZATION COMPLETE SIGNAL.

- * ON EACH NEW EXPANSION BOARD WHEN THE INITIALIZATION IS COMPLETE, THE GREEN LED GIVES A REGULAR ON/OFF BLINK FOUR TIMES.
- * THE LED ALSO BLINKS WHEN THE EXPANSION BOARD IS COMMUNICATING WITH THE TRC. HOWEVER, THE TRANSMISSION BLINKING IS IRREGULAR IN CONTRAST TO THE INITIALIZATION COMPLETE SIGNAL.

5. DATA ENTRY SCREENS:

THESE CAN NOW BE UPDATED WITHOUT LEAVING AND THEN RETURNING TO THE SCREEN. PRESSING <ENT> OR ANY ARROW KEY, UPDATES THE CURRENT TRC DATA ENTRY SCREEN.

6. DAYLIGHT SAVINGS TIME MODES: THREE OPTIONS CAN BE SELECTED ON THE TRC.

- 1) AUTOMATIC: AUTOMATICALLY SETS DST FOR FIRST SUNDAY IN APRIL AND LAST SUNDAY IN OCTOBER (STANDARD USA). THIS IS THE DEFAULT.
- 2) MANUAL: PERFORMS DST CORRECTION ON DATES ENTERED MANUALLY. DATES HAVE NO EFFECT FOR OTHER TWO MODES.
- 3) NONE: DISABLES DST. DATES SHOWN HAVE NO EFFECT.

7. THE TRC SCREEN DISPLAYS A NEW MESSAGE DURING DIAL-OUT.

- * WHEN A DIAL-OUT IS IN PROGRESS THE TRC SCREEN WILL DISPLAY THE ONE BAR MESSAGE "DIAL-OUT IN PROGRESS".
- * OTHER REMOTE COMMUNICATIONS WILL DISPLAY THE STANDARD TWO BAR MESSAGE

"REMOTE TERMINAL ACTIVE"
"STATUS DISPLAY SUSPENDED"

8. IN THE TRC SCREENS ALL REFERENCES TO "SHORT" HAVE BEEN CHANGED TO "CLOSED".

9. POWER FAILURES ARE LOGGED AS ALARMS; POWER RESTORES ARE LOGGED AS NOTICES.

10. DIGITAL SENSORS NO LONGER HAVE AN ALARM MESSAGE. WHEN A DIGITAL SENSOR ALARM OCCURS, THE ALARM MESSAGE IS THE SENSOR NAME.

11. COMPRESSOR PROOF DELAYS HAVE BEEN CHANGED.

- * THE DELAY FOR PROOFS HAS BEEN LENGTHENED TO 30 SECONDS. THE ON/OFF COMMAND TO EACH COMPRESSOR IS CONTINUOUSLY COMPARED TO THE COMPRESSOR'S STATUS VIA AN INDEPENDENT "PROOF SENSOR". IF THE COMPRESSOR'S ON/OFF STATUS IS OPPOSITE THE TRC COMMAND FOR 30 CONTINUOUS SECONDS, THEN A PROOF ALARM WILL BE LOGGED.
- * RUN PROOFS NOW WORK FOR VARIABLE SPEED COMPRESSORS.

12. ARROW KEYS NOW WORK IN REMOTE TERMINAL "TYPE-AHEAD" MODE.
13. TO CLEAR RAM MEMORY USE THE FOLLOWING PROCEDURE:
 - * TURN TRC POWER OFF.
 - * SHORT TP2 (0 VOLTS) AND PIN 28 (TOP RIGHT CORNER PIN) OF RAM CHIP (U34E) FOR 1 SECOND.
 - * TURN TRC POWER ON
 - * BLUE R TRC.
 - * TURN TRC OFF THEN ON.
14. PRESSURE CONTROL SETUP(#6) SCREENS HAVE BEEN RE-SEQUENCED. THE FIRST SCREEN HAS BEEN MOVED TO THE LAST SCREEN IN THE VIEWING SEQUENCE.
15. THE LIQUID-LEVEL OPTION (BLUE Q) HAS BEEN ADDED TO THE "SENSOR CONTROL SETUP" SCREEN.
16. WHEN A SELECTION IS MADE ON THE STATUS SELECTION SCREEN, THE UP ARROW (PREV) NO LONGER RETURNS TO THE MAIN STATUS SCREEN BUT RATHER TO THE PREVIOUS MENU, "STATUS MENU".
17. DISCHARGE PRESSURE DEFAULTS TO ZERO AT STARTUP OR WHEN THE DISCHARGE PRESSURE INPUT IS NOT DEFINED. THE DISCHARGE PRESSURE DOES NOT "FLOAT" ANYMORE.
18. CONDENSER CONTROL BY TEMPERATURE USES CONDENSER OUTLET TEMPERATURE NOT DISCHARGE TEMPERATURE.
19. THE DAY OF THE WEEK IS AUTOMATICALLY CALCULATED AND DISPLAYED BASED ON THE DATE ENTERED. BECAUSE ONLY THE 2 DIGIT YEAR IS ENTERED, THE DATES RUN FROM 01-01-1989(SUNDAY) TO 12-31-2088(FRIDAY).
20. PUMP-DOWN NOW HAS 3 SELECTIONS ON THE "PRESSURE ALARMS SETUP" SCREEN
 1. (A)LARM ALL COMPRESSORS ARE SHUTOFF AND AN ALARM IS LOGGED.
 2. (N)OTICE ALL COMPRESSORS ARE SHUTOFF AND A NOTICE IS LOGGED.
 3. (D)ISABLE PUMP DOWN SETTINGS ARE IGNORED; NOTHING LOGGED.
21. PUMP-DOWN BUGS HAVE BEEN CORRECTED.
 - * ON THE PRESSURE ALARMS SCREEN, PUMP-DOWN ALARM OR NOTICE CAN NOW BE INDEPENDENTLY SELECTED FOR GROUP 1 AND GROUP 2. PREVIOUSLY, GROUP 2 DEFAULTED TO GROUP 1 SELECTION.
 - * PUMP-DOWN "ALL COMPRESSORS OFF" NOW WORKS WITH GROUP 1 AND 2 VARIABLE SPEED COMPRESSORS.

#1
Riser Pit

#2
Machine Room

#3
Pro Ret Air

#4
DAB Ret Air