

SECTION 4 - PRINTING



LD16572

**OKIPOS 441 Serial
Charcoal p/n 62113901
Beige p/n 62113601**

FIGURE 62 - PRINTER

PRINTING OVERVIEW

A printer can be connected to the Control Center's Microboard to print the following reports. The screen from which each report can be generated is listed in parenthesis.

- **Status** - Present system parameters (Printer, Home)
- **Setpoints** - Present programmed values of all setpoints (Printer, Setpoints)
- **Schedule** - Present value of programmed daily schedule (Printer, Schedule)
- **Sales Order** - Information about SALES ORDER Screen (Printer, Sales Order)
- **History** - System parameters at the time of the last normal stop, last fault while running and last 10 faults, whether running or not (Printer, History)
- **Cycling or Safety Shutdown Initiated Print** - Snapshot of all system parameters at instant of shutdown. Automatically occurs if printer is connected at time of shutdown.
- **Adaptive Capacity Control (ACC) Surge Map** - System conditions at instant all surge points were mapped. (Compressor Motor Variable Speed Drive applications; requires SERVICE access level) (Printer, ACC)

- **Trend (Flash Memory Card version C.MLM.01.05.xxx and later)** - Prints a snapshot of the existing TREND Screen data or prints new data collected after the TREND PRINT key is pressed.

The printer can be permanently connected to the Control Center or connected as required to produce a report. If permanently connected, a DATA LOGGING feature can produce a status report automatically, beginning at an Operator selected start time and occurring at an Operator selected interval thereafter.

The following figures are examples of the different print reports. Solid State Starter application print reports shown. Electro-Mechanical Starter and Variable Speed Drive reports are similar but print parameters applicable to those devices.

- *Figure 64* - Status on *Page 208*
- *Figure 65* - Setpoints on *Page 210*
- *Figure 66* - Schedule on *Page 212*
- *Figure 67* - Sales Order on *Page 212*
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- *Figure 69* - Security Log (Flash Memory Card version C.MLM.01.06.xxx and later and "P" compressors C.MLM.04.02.xxx and later) on *Page 216*
- *Figure 70* - Trend (Flash Memory Card version C.MLM.01.05.xxx and later) on *Page 216*
- *Figure 71* - CUSTOM Screen (If compressor other than "P", applies only to Flash Memory Card C.MLM.01.04 and later) on *Page 216*
- *Figure 72* - Adaptive Capacity Control New Map point Report on *Page 217*
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ACCEPTABLE PRINTERS

The following printers can be used. Printers must be equipped with an RS-232 Serial interface.

Okidata –**Models: OKIPOS 441**

- Dimensions:
6.9 in. wide x 9.64 in. deep x 5.98 in. high
- Paper: 3.0 in. wide
- Type: Dot Matrix Impact
- Purchase: 800-OKIDATA
Spare printer Ribbon Okidata 52119001 Black

The Control Center provides the required formatting control codes for the printers above when the printer is selected on the PRINTER Screen in the instructions below. These codes are transmitted through the serial interface to the printer to provide a proper print format.

Different printers require different formatting control codes. Other printers might provide proper operation when connected to the Control Center. However, the print format may not be correct or as desired.

Proceed with caution and use the following guidelines if an unlisted printer is selected:

1. All must be capable of RS-232 serial communications.
2. Primary differences between printers involve the formatting control codes required by the printer. These codes are sent from the Control Center to the printer. For example, Weigh-Tronix printers require a control code to select 40 column width. This same code is interpreted by the Okidata printer as an instruction to print wide characters. In some instances, a printer will ignore a code it cannot interpret.
3. The Control Center requires a busy signal from the printer when the printer receive buffer is full. This causes the Control Center to momentarily terminate data transmission until the printer can accept more data. The busy signal polarity must be asserted low when busy.

PRINTER CONNECTIONS

Connect the printers to the Control Center Microboard as follows. Only one printer can be connected at a time.

TABLE 5 - OKIDATA OKIPOS 441

MICROBOARD	PRINTER	FUNCTION
J2-4	pin 3	Tx (data to printer)
J2-2	pin 20	DSR (busy signal from printer)
J2-9	pin 7	Gnd
Cabinet		Shield

Hardware required:**Cable**

- #18 AWG stranded 50 ft. maximum length.

Connectors

Microboard

- None. Strip 1/4" insulation from wire and insert into screw terminal block.

Printers

- Okidata - 25 pin plug DB-25P or equivalent; Shell DB-C2-J9 or equivalent.

PRINTER SETUP

The selected printer must be configured as follows. Refer to manual provided by printer manufacturer with respective printer.

OKIDATA OKIPOS 441

1. With the printer power off, remove the two screws which hold the RS232 Interface Module.
2. Pull the RS232 Interface Module out of the printer.
3. Set DIP switch SW2-2 to OFF to select 19200 BPS. Do not change any other switch settings.
4. Re-install the RS232 Interface Module and two mounting screws.
5. Load paper and install the printer ribbon into the printer.
6. Connect the printer cable to the printer and the microboard.
7. Connect the printer power cable to the printer and plug into a 100 to 240VAC power source.

CONTROL CENTER SETUP

Chiller ID

Access Level Required: OPERATOR

Using the COMMS Screen, assign an identification number to the chiller. This number will appear at the top of each report.

Printer Setup

Access Level Required: OPERATOR

Using the COMMS Screen, the Control Center must be configured to transmit data in the same format as the printer is configured to receive the data. The following values must be entered.

- Baud Rate - Set to 19200
- Data Bits - 8
- Parity - None
- Stop Bits - 1

Printer Type

Access Level Required: OPERATOR

Using the PRINTER Screen, set the printer type to Weigh-Tronix.

Automatic Data Logging

Access Level Required: OPERATOR

If automatic data logging is desired, a status report can be automatically printed at a specified interval beginning at a specified time, using the PRINTER Screen. The interval is programmable over the range of 1 minute to 1440 minutes in 1 minute increments. The first print will occur at the programmed START time and occur at the programmed Output Interval thereafter. The time remaining until the next print is displayed on the PRINTER Screen.

- Automatic Printer Logging - Enables and disables automatic data logging.
- Log Start Time - Enter the time the first print is desired.
- Output Interval - Enter the desired interval between prints.

DOWNLOADING SYSTEM PRINTS TO A LAPTOP

Downloading system histories to a file is another useful method to capture system operating conditions. The following instructions are used to establish communication between the OptiView Control Panel and a laptop computer.

1. Connect the laptop computer to the OptiView as described below.

Laptop (RS-232 Serial Port)			OptiView (Com 1)	
PIN	DESC		Connector	Terminal
2	RX	to	J2	4 (TXD1)
4	DTR	to	J2	2 (DSR1)
5	GND	to	J2	9 GND

2. On OptiView Printer Screen, select "PC". This will allow faster data download than the printer selections. SETTINGS should match "H. Port settings" see below. Earlier software select SEIKO if PC selection is not available.

3. Setup HyperTerminal

- A. Go to START menu
 - B. Select All Programs
 - C. Select Accessories
 - D. Select Communications
 - E. Select HyperTerminal
 - F. In the box displayed, it requires a name and icon for the connection. Select a name that is descriptive and select an icon. Select OK.
 - G. In the box labeled Connect using the select com port that will connect to the YK unit. This port is usually labelled Com 1. Select OK.
 - H. Port settings

Bits per second	57600
Data bits	8
Parity	None
Stop Bits	1
Flow control	None
4. Set HyperTerminal to capture a file.
- A. Select Transfer from toolbar
 - B. Select Capture Text from the drop down menu.
 - C. A Capture Text Filebox will be displayed. Verify location and file name.
 - D. Select Start.
5. Press the Print Screen key on the appropriate screen to be captured. The HyperTerminal will display the printed information and the information will be recorded as a .txt file.

When the print file has been recorded, select Transfer from the toolbar and capture from the drop down menu and select Stop. This will stop the transfer and allow access to the capture file.

The following additional RS232 connections, are used to wire up serial devices for desktop and laptop computers.

RS-232 PIN ASSIGNMENTS (DB25 PC SIGNAL SET) (OLDER DESKTOPS ONLY)	
Pin 1	Protective Ground
Pin 2	Transmit Data
Pin 3	Recieved Data
Pin 4	Request To Send
Pin 5	Clear To Send
Pin 6	Data Set Ready
Pin 7	Signal Ground
Pin 8	Recieved line Signal Detector (Data Carrier Detect)
Pin 20	Data Terminal Ready
Pin 22	Ring Indicator

The connector on the PC has Male pins, therefore the mating cable needs to terminate in a DB25/F (Female pin) connector.

RS-232 PIN ASSIGNMENTS (DB9 PC SIGNAL SET) (MOST LAPTOPS)	
Pin 1	Recieved line Signal Detector (Data Carrier Detect)
Pin 2	Recieved Data
Pin 3	Transmit Data
Pin 4	Data Terminal Ready
Pin 5	Signal Ground
Pin 6	Data Set Ready
Pin 7	Request To Send
Pin 8	Clear To Send
Pin 9	Ring Indicator

The connector on the PC has male pins; therefore, the mating cable needs to terminate DB9/F (female pin) connector.

Brecknell –

Models: Brecknell CP130

- Dimensions:
5.25" Long x 3.75" Wide x 2.5" High
- Paper: Thermal 57mm (2.25")
- Type: Dot Matrix
- Purchase: 800-637-0529 (North America)
+44 (0) 845-246-6717 (Europe & ME)
- P/N AWT 05-505788 (printer, cable, 1 roll of paper)
- P/N AWT 05-505594 (power supply)
- P/N AWT 05-505671 (case, 20 rolls of paper)

PRINTER CONNECTIONS

Connect the printer to the Control Center Microboard as follows. Only one printer can be connected at a time.

TABLE 6 - BRECKNELL CP130

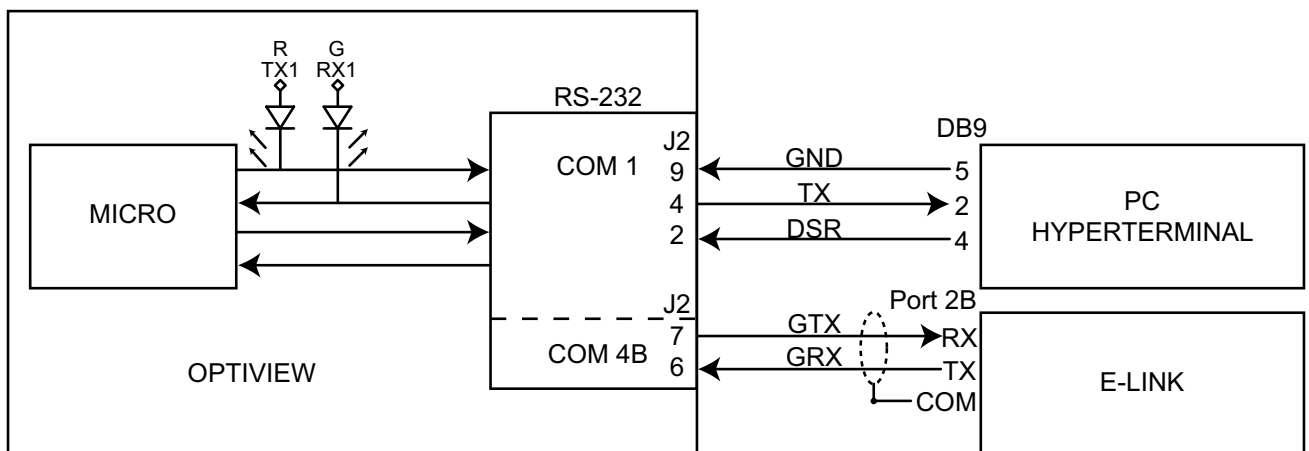
Modify the cable and connect as shown below.

MICROBOARD	PRINTER	FUNCTION
J2-4	Pin 3	TX Data to the printer
J2-2	Pin 5	Busy signal from the printer
J2-9	Pin 6	Signal Common



LD17609

FIGURE 63 - BRECKMAN PRINTER



LD14492

FIGURE 64 - COMMUNICATIONS BLOCK DIAGRAM

YORK UPDATE**CHILLER ID 0**

(c) 1997 - 2001 YORK INTERNATIONAL CORPORATION
Mon 22 Nov 1999 8:50:45 AM

SYSTEM RUN

LEAVING CHILLED LIQUID CONTROL

[List all warnings presently active]

Controls C.MLM.01.06.102

Run Time 0 Days 2 Hr 59 Min

Operating Hours = 25 Hr
Number Of Starts = 6
Control Source = Local

Evaporator

Leaving Chilled Active Setpoint = 45.0 ~F
Chilled Liquid Pump = Run
Chilled Liquid Flow Switch = Closed
Leaving Chilled Liquid Temperature = 45.0 ~F
Return Chilled Liquid Temperature = 55.0 ~F
Evaporator Pressure = 75.0 Psig
Evaporator Saturation Temperature = 44.4 ~F
Evaporator Refrigerant Temperature = 44.5 ~F
[If Refrigerant Sensor enabled]
Small Temperature Difference = 0.5 ~F

Condenser

Condenser Liquid Pump = Run
Condenser Liquid Flow Switch = Closed
Leaving Condenser Liquid Temperature = 95.0 ~F
Return Condenser Liquid Temperature = 85.0 ~F
Condenser Pressure = 200.0 Psig
Condenser Saturation Temperature = 101.4 ~F
Small Temperature Difference = 6.4 ~F
Drop Leg Refrigerant Temperature = 83.0 ~F
[If Drop Leg Sensor enabled]
Sub Cooling Temperature = 18.4 ~F
[If Drop Leg Sensor enabled]

Compressor

Discharge Temperature = 120.0 ~F
Liquid Line Solenoid = On
[If Mod C Chiller]
Vent Line Solenoid = On
[If Mod D Chiller or higher]

Oil Sump

Oil Pump Run Output = On
Sump Oil Pressure (LOP) = 75.8 Psig
Pump Oil Pressure (HOP) = 124.6 Psig
Oil Pressure = 47.8 Psid
Oil Sump Temperature = 150.0 ~F
Oil Heater = Off
[If Mod D Chiller or higher]
Oil Return Solenoid = Off
[If Mod D Chiller or higher]

[Skip the following section if Hot Gas Bypass is not enabled]

Hot Gas

Valve Position = 15 %
Pre-Rotation Vanes Position = 75 %

Surge

Total Surge Count = 127
Surge Window Time = 1 Min
Surge Window Count = 0

[Skip the following section if Variable Speed Oil Pump is not installed]

Variable Speed Oil Pump

Oil Pump Drive Command Frequency = 25.0 Hz
Pulldown Time Remaining = 9.0 Min
[If Pulldown in effect]

[Skip the following section if Liquid Level is not enabled]

Refrigerant Level Control

Refrigerant Level Position = 35 %
Ramp Up Time Remaining = 15 Sec

[If Ramp Up in effect]

Proximity Probe

High Speed Thrust Bearing Proximity Differen = 2 Mills
High Speed Thrust Solenoid = On
[If Mod C Chiller]

[Skip the following section if Motor Type is not EM]
Electro-Mechanical Starter

Motor Run = On
% Full Load Amps = 94 %

[Skip the following section if Motor Type is not Mod A SSS]
Liquid-Cooled Solid State Starter

Motor Run = On
% Full Load Amps = 94 %
Phase A Voltage = 447 V
Phase B Voltage = 409 V
Phase C Voltage = 442 V
Phase A Current = 193 A
Phase B Current = 204 A
Phase C Current = 190 A

[Skip the following section if Motor Type is not Mod B SSS]

Liquid-Cooled Solid State Starter

Starter Model = 26L
Motor Run = On
% Full Load Amps = 95 %
kW Hours = 20723 kWh
Input Power = 8225 kW

FIGURE 65 - SAMPLE PRINTOUT (STATUS)

FIGURE 64 - SAMPLE PRINTOUT (STATUS) (CONT'D)

Phase A Voltage	= 422 V
Phase B Voltage	= 449 V
Phase C Voltage	= 449 V
Phase A Current	= 253 A
Phase B Current	= 257 A
Phase C Current	= 262 A
Phase A Temperature	= 109 ~F
Phase B Temperature	= 109 ~F
Phase C Temperature	= 110 ~F
[Skip the following section if Motor Type is not VSD]	
Variable Speed Drive	

Motor Run	= On
% Full Load Amps	= 94 %
Pre-Rotation Vanes Position	= 75 %
Full Load Amps	= 402 A
Precharge Relay Output	= Off
Trigger SCR Output	= On
Water Pump Output	= On
kW Hours	= 14528 kWh
Input Power	= 150 kW
Output Frequency	= 60Hz
Output Voltage	= 800 V
DC Bus Voltage	= 600 V
DC Inverter Link Current	= 300 A
Phase A Output Current	= 195 A
Phase B Output Current	= 198 A
Phase C Output Current	= 193 A
Internal Ambient Temperature	= 88 ~F
Converter Heatsink Temperature	= 102 ~F
Phase A Heatsink Temperature [If TMIII VSD]	= 93 ~F
Phase B Heatsink Temperature [If TMIII VSD]	= 99 ~F
Phase C Heatsink Temperature [If TMIII VSD]	= 97 ~F
Baseplate Temperature [If VyperDrive VSD]	= 106 ~F

FIGURE 64 - SAMPLE PRINTOUT (STATUS) (CONT'D)

[Skip the following section if Motor Type is not VSD, or Filter is not present]	
Harmonic Filter Data	

Precharge Contactor	= Off
Supply Contactor	= On
Operating Mode	= Running
Phase Rotation	= ABC
Total Supply kVA	= 148 kVA
Total Power Factor	= 0.97
DC Bus Voltage	= 608 V
Heatsink Temperature [If TMIII VSD]	= 102 ~F
Baseplate Temperature [If VyperDrive VSD]	= 102 ~F
Voltage Peak N-L1	= 200 V
Voltage Peak N-L2	= 200 V
Voltage Peak N-L3	= 200 V
L1-L2 RMS Voltage	= 215 V
L2-L3 RMS Voltage	= 215 V
L3-L1 RMS Voltage	= 215 V
L1 RMS Filter Current	= 150 A
L2 RMS Filter Current	= 150 A
L3 RMS Filter Current	= 150 A
L1 RMS Supply Current	= 152 A
L2 RMS Supply Current	= 152 A
L3 RMS Supply Current	= 152 A
L1 Voltage Total Harmonic Distortion	= 1.5 %
L2 Voltage Total Harmonic Distortion	= 1.2 %
L3 Voltage Total Harmonic Distortion	= 1.1 %
L1 Supply Current Total Demand Distortion	= 2.6 %
L2 Supply Current Total Demand Distortion	= 2.3 %
L3 Supply Current Total Demand Distortion	= 2.8 %

FIGURE 64 - SAMPLE PRINTOUT (STATUS) (CONT'D)

YORK SETPOINTS**CHILLER ID 0**

(c) 1997 - 2001 YORK INTERNATIONAL CORPORATION
Mon 22 Nov 1999 8:48:27 AM

Software Versions

```

-----
Controls                = C.MLM.01.04
BIOS                    = C.MLM.00.00
Kernel                  = 0.18
GUI                     = 0.28
SIO                     = 0.23
GPIC                    = 0.04
Ext I/O                 =
0110112091996

```

[Skip if External I/O board is not activated]

```

VSD [Skip if Motor Type is not VSD] = C.VSD.00.00
SSS [Skip if Motor Type is not Mod B SSS] = C.SSS.01.01

```

System Information

```

-----
System Language         = English
Data Display Mode      = English
Control Source         = Local
Remote Analog Input Range = 0-10 Volts
Clock                  = Enabled

```

Jumper Settings

```

-----
Pre-Run                 = Standard
Coastdown               = Standard
Chilled Liquid Pump Operation = Standard
Refrigerant Selection  = R22
Anti-Recycle           = Enabled
Power Failure Restart   = Auto
Liquid Type            = Water
Motor Type              = Fixed Speed

```

Printer Setup

```

-----
Automatic Printer Logging = Disabled
Log Start Time           = 12:00 am
Output Interval         = 60 Min
Printer Type            = Okidata
Baud                    = 9600 Baud
Data Bits               = 8 Bits
Parity                  = None
Stop Bits               = 1 Bit

```

COM 2 Setup

```

-----
Baud                    = 19200 Baud
Data Bits               = 8 Bits
Parity                  = Odd
Stop Bits               = 1 Bit

```

Evaporator

```

-----
Leaving Chilled Local Setpoint = 45.0 ~F
Leaving Chilled ISN Setpoint   = 45.0 ~F
Leaving Chilled Modem Setpoint = 45.0 ~F
Leaving Chilled Analog Setpoint = 45.0 ~F
Leaving Chilled Digital Setpoint = 45.0 ~F

```

```

Remote Range           = 10.0 ~F
Sensitivity            = Normal
Restart Offset        = 0.0 ~F
Restart Setpoint      = 45.0 ~F
Shutdown Offset       = 4.0 ~F
Shutdown Setpoint     = 41.0 ~F
Brine Low Evaporator Cutout = 54.3 Psig
Smart Freeze          = Off
Refrigerant           = Enabled

```

Condenser

```

-----
High Pressure Warning Threshold = 246.3 Psig
Drop Leg                       = Enabled

```

Oil Sump

```

-----
Oil Pump Package         = Variable
Speed                   =
Standby Lube            = On

```

[Skip the following section if Variable Speed Oil Pump is not installed]

Variable Speed Oil Pump

```

-----
Pressure Setpoint       = 35 Psid
Control Period         = 0.9 Sec

```

Proximity Probe

```

-----
High Speed Thrust Bearing Proximity Referenc = 41 Mils

```

[Skip the following section if Liquid Level is not enabled]

Refrigerant Level Control

```

-----
Level Control           = On
Setpoint                = 50 %
Period                  = 3.5 Sec
Proportion Limit Open  = 15 %
Proportion Limit Close = 45 %
Rate Limit Open        = 10 %
Rate Limit Close       = 10 %

```

[Skip the following section if Hot Gas Bypass is not enabled]

Hot Gas

```

-----
Hot Gas                 = Enabled
Hold Period             = 30 Min
Close Percentage        = 5 %
Minimum Load           = 1 ~F
Maximum Open           = 80 %

```

Surge

```

-----
Surge Sensitivity      = 0.3
Shutdown              = Enabled
Extended Run          = Disabled
Count Limit           = 15
Count Window          = 5 Min

```

FIGURE 66 - SAMPLE PRINTOUT (SETPOINTS)

FIGURE 65 - SAMPLE PRINTOUT (SETPOINTS) (CONTD)

```

    [Skip the following section if Motor Type is not EM]
    Electro-Mechanical Starter
    -----
    Local Motor Current Limit           = 100 %
    Remote ISN Current Limit            = 100 %
    Remote Analog Current Limit         = 100 %
    Remote Digital Current Limit        = 100 %
    Remote Modem Current Limit          = 100 %
    Pulldown Demand Limit              = 100 %
    Pulldown Demand Time                = 0 Min

    [Skip the following section if Motor Type is not Mod A
    SSS]
    Liquid-Cooled Solid State Starter
    -----
    Local Motor Current Limit           = 100 %
    Remote ISN Current Limit            = 100 %
    Remote Analog Current Limit         = 100 %
    Remote Digital Current Limit        = 100 %
    Remote Modem Current Limit          = 100 %
    Pulldown Demand Limit              = 100 %
    Pulldown Demand Time                = 0 Min
    Scale/Model                         = 600 V, 281
    Supply Voltage Range                = Disabled
    Full Load Amps                     = 150 A
    Current Imbalance Check             = Disabled

    [Skip the following section if Motor Type is not Mod B
    SSS]
    Liquid-Cooled Solid State Starter
    -----
    Local Motor Current Limit           = 100 %
    Remote ISN Current Limit            = 100 %
    Remote Analog Current Limit         = 100 %
    Remote Digital Current Limit        = 100 %
    Remote Modem Current Limit          = 100 %
    Pulldown Demand Limit              = 100 %
    Pulldown Demand Time                = 0 Min
    Starter Model                       = 26L
    Voltage Range                       = 440 - 480
    Full Load Amps                     = 275 A
    Starting Current                    = 1150 A
    Open SCR                            = Enabled
    
```

FIGURE 65 - SAMPLE PRINTOUT (SETPOINTS) (CONT'D)

```

    Shorted SCR                         = Disabled

    [Skip the following section if Motor Type is not VSD]
    Variable Speed Drive
    -----
    Local Motor Current Limit           = 100 %
    Remote ISN Current Limit            = 100 %
    Remote Analog Current Limit         = 100 %
    Remote Digital Current Limit        = 100 %
    Remote Modem Current Limit          = 100 %
    Pulldown Demand Limit              = 100 %
    Pulldown Demand Time                = 0 Min
    Motor HP                            = 351 HP
    Power Line Frequency                = 60Hz

    [Skip the following section if Motor Type is not VSD]
    Harmonic Filter Data
    -----
    Filter Operation                     = Enabled
    Motor HP                             = 351 HP

    [Skip the following section if Motor Type is not VSD]
    Adaptive Capacity Control
    -----
    Surge Margin Adjust                 = 0 Hz
    Stability Limit                      = 4500
    
```

FIGURE 65 - SAMPLE PRINTOUT (SETPOINTS) (CONT'D)

YORK SCHEDULE			
CHILLER ID 3			
© 1997 - 1999 YORK INTERNATIONAL CORPORATION			
MON 29 MAR 1999 1 27 PM			
SCHEDULE = OFF			
STANDARD SCHEDULE			

SUN	START	= OFF	STOP = OFF
MON	START	= 8:00 AM	STOP = 5:00 PM
TUE	START	= 8:00 AM	STOP = 5:00 PM
WED	START	= 8:00 AM	STOP = 5:00 PM
THU	START	= 8:00 AM	STOP = 5:00 PM
FRI	START	= 8:00 AM	STOP = 5:00 PM
SAT	START	= OFF	STOP = OFF
EXCEPTION DAYS			

02 APR 1999	START	= OFF	STOP = OFF
13 APR 1999	START	= 8:00 AM	STOP = 10:00 PM

FIGURE 67 - SAMPLE PRINTOUT (SCHEDULE)

YORK SALES ORDER	
CHILLER ID 3	
© 1997 - 1999 YORK INTERNATIONAL CORPORATION	
MON 29 MAR 1999 1 28 PM	
ORDER INFORMATION	

COMMISSIONING DATE	= 01 JAN 1999
JOB NAME	=
JOB LOCATION	=
MODEL NUMBER	=
YORK ORDER NUMBER	=
PANEL SERIAL NUMBER	=
CHILLER SERIAL NUMBER	=
DESIGN LOAD - CONDENSER	=

PASSES	=
DESIGN WORKING PRESSURE	=
FOULING FACTOR	=
PRESSURE DROP	=
NOZZLE ARRANGEMENT IN	=
NOZZLE ARRANGEMENT OUT	=
LEAVING TEMPERATURE	=
RETURN TEMPERATURE	=
GPM	=
TUBES	=
DESIGN LOAD - EVAPORATOR	=

PASSES	=
DESIGN WORKING PRESSURE	=
FOULING FACTOR	=
PRESSURE DROP	=
NOZZLE ARRANGEMENT IN	=
NOZZLE ARRANGEMENT OUT	=
LEAVING TEMPERATURE	=
RETURN TEMPERATURE	=
GPM	=
TUBES	=

FIGURE 68 - SAMPLE PRINTOUT (SALES ORDER)

NAMEPLATE INFORMATION	
MOTOR CODE	=
POWER (VOLTS)	=
PHASES	=
FREQUENCY (HZ)	=
LOOKED ROTOR AMPS	=
FULL LOAD AMPS	=
INRUSH AMPS	=
SYSTEM INFORMATION	
REFRIGERANT	=
TONS	=
GEAR CODE	=
LIQUID TYPE	=
BRINE PERCENT	=
KILOWATTS INPUT	=
VSD / SSS / EM	=

**FIGURE 67 - SAMPLE PRINTOUT (SALES ORDER)
(CONT'D)**

4

YORK HISTORY 1**CHILLER ID 0**

(c) 1997 - 2001 YORK INTERNATIONAL CORPORATION
Mon 22 Nov 1999 9:23:12 AM

SYSTEM READY TO START

LCSSS - LOGIC BOARD POWER SUPPLY

[List any warnings that were active at the time of shutdown]

Controls C.MLM.01.06.102
Run Time 0 Days 2 Hr 59 Min

Operating Hours = 25 Hr
Number Of Starts = 6
Control Source = Local

Evaporator

Leaving Chilled Active Setpoint = 45.0 ~F
Chilled Liquid Pump = Stop
Chilled Liquid Flow Switch = Open
Leaving Chilled Liquid Temperature = 45.0 ~F
Return Chilled Liquid Temperature = 55.0 ~F
Evaporator Pressure = 75.0 Psig
Evaporator Saturation Temperature = 44.4 ~F
Evaporator Refrigerant Temperature = 44.5 ~F
[If Refrigerant Sensor enabled]
Small Temperature Difference = 0.5 ~F

Condenser

Condenser Liquid Pump = Stop
Condenser Liquid Flow Switch = Open
Leaving Condenser Liquid Temperature = 95.0 ~F
Return Condenser Liquid Temperature = 85.0 ~F
Condenser Pressure = 200.0
Psig
Condenser Saturation Temperature = 101.4 ~F
Small Temperature Difference = 6.4 ~F
Drop Leg Refrigerant Temperature = 83.0 ~F
[If Drop Leg Sensor enabled]
Sub Cooling Temperature = 18.4 ~F
[If Drop Leg Sensor enabled]

Compressor

Discharge Temperature = 120.0 ~F
Liquid Line Solenoid = Off
[If Mod C Chiller]
Vent Line Solenoid = Off
[If Mod D Chiller or higher]

Oil Sump

Oil Pump Run Output = Off
Sump Oil Pressure (LOP) = 75.8 Psig
Pump Oil Pressure (HOP) = 76.6 Psig
Oil Pressure = 0.0 Psid
Oil Sump Temperature = 150.0 ~F
Oil Heater = Off
[If Mod D Chiller or higher]
Oil Return Solenoid = Off
[If Mod D Chiller or higher]

[Skip the following section if Hot Gas Bypass is not enabled]

Hot Gas

Valve Position = 0 %
Pre-Rotation Vanes Position = 0 %

Surge

Total Surge Count = 127
Surge Window Time = 1 Min
Surge Window Count = 0

[Skip the following section if Variable Speed Oil Pump is not installed]

Variable Speed Oil Pump

Oil Pump Drive Command Frequency = 25.0 Hz
Pulldown Time Remaining = 9.0 Min
[If Pulldown in effect]

[Skip the following section if Liquid Level is not enabled]

Refrigerant Level Control

Refrigerant Level Position = 35 %
Ramp Up Time Remaining = 15 Sec
[If Ramp Up in effect]

Proximity Probe

High Speed Thrust Bearing Proximity Differen = 2 Mils
High Speed Thrust Solenoid = Off
[If Mod C Chiller]

[Skip the following section if Motor Type is not EM]
Electro-Mechanical Starter

Motor Run = Off
% Full Load Amps = 0 %

[Skip the following section if Motor Type is not Mod A SSS]

Liquid-Cooled Solid State Starter

Motor Run = Off
% Full Load Amps = 0 %
Phase A Voltage = 447 V
Phase B Voltage = 409 V
Phase C Voltage = 442 V
Phase A Current = 0 A
Phase B Current = 0 A
Phase C Current = 0 A

[Skip the following section if Motor Type is not Mod B SSS]

Liquid-Cooled Solid State Starter

Starter Model = 26L
Motor Run = Off
% Full Load Amps = 0 %
kW Hours = 20723
kWH

FIGURE 69 - SAMPLE PRINTOUT (HISTORY)

FIGURE 68 - SAMPLE PRINTOUT (HISTORY) (CONT'D)

Input Power	= 0 kW
Phase A Voltage	= 422 V
Phase B Voltage	= 449 V
Phase C Voltage	= 449 V
Phase A Current	= 0 A
Phase B Current	= 0 A
Phase C Current	= 0 A
Phase A Temperature	= 109 ~F
Phase B Temperature	= 109 ~F
Phase C Temperature	= 110 ~F
[Skip the following section if Motor Type is not VSD]	
Variable Speed Drive	

Motor Run	= Off
% Full Load Amps	= 0 %
Pre-Rotation Vanes Position	= 0 %
Full Load Amps	= 402 A
Precharge Relay Output	= Off
Trigger SCR Output	= Off
Water Pump Output	= Off
kW Hours	= 14528 kWh
Input Power	= 0 kW
Output Frequency	= 0 Hz
Output Voltage	= 0 V
DC Bus Voltage	= 600 V
DC Inverter Link Current	= 0 A
Phase A Output Current	= 0 A
Phase B Output Current	= 0 A
Phase C Output Current	= 0 A
Internal Ambient Temperature	= 88 ~F
Converter Heatsink Temperature	= 102 ~F

FIGURE 68 - SAMPLE PRINTOUT (HISTORY)
 (CONT'D)

Phase A Heatsink Temperature [If TMIII VSD]	= 93 ~F
Phase B Heatsink Temperature [If TMIII VSD]	= 99 ~F
Phase C Heatsink Temperature [If TMIII VSD]	= 97 ~F
Baseplate Temperature [If VyperDrive VSD]	= 106 ~F
[Skip the following section if Motor Type is not VSD, or Filter is not present]	
Harmonic Filter Data	

Precharge Contactor	= Off
Supply Contactor	= Off
Operating Mode	= Stopped
Phase Rotation	= ABC
Total Supply kVA	= 0 kVA
Total Power Factor	= 0.00
DC Bus Voltage	= 608 V
Heatsink Temperature [If TMIII VSD]	= 102 ~F
Baseplate Temperature [If VyperDrive VSD]	= 102 ~F
Voltage Peak N-L1	= 200 V
Voltage Peak N-L2	= 200 V
Voltage Peak N-L3	= 200 V
L1-L2 RMS Voltage	= 215 V
L2-L3 RMS Voltage	= 215 V
L3-L1 RMS Voltage	= 215 V
L1 RMS Filter Current	= 0 A
L2 RMS Filter Current	= 0 A
L3 RMS Filter Current	= 0 A
L1 RMS Supply Current	= 0 A
L2 RMS Supply Current	= 0 A
L3 RMS Supply Current	= 0 A
L1 Voltage Total Harmonic Distortion	= 1.5 %
L2 Voltage Total Harmonic Distortion	= 1.2 %
L3 Voltage Total Harmonic Distortion	= 1.1 %
L1 Supply Current Total Demand Distortion	= 0.0 %
L2 Supply Current Total Demand Distortion	= 0.0 %
L3 Supply Current Total Demand Distortion	= 0.0 %

FIGURE 68 - SAMPLE PRINTOUT (HISTORY)
 (CONT'D)

```

YORK SETPOINT CHANGE LOG
CHILLER ID 0
(c) 1997 - 2001 YORK INTERNATIONAL CORPORATION
Fri 05 Oct 2001 4:48:04 PM

Log Entry 1 Evaporator - Leaving Chilled Local Setpoint
-----
Date = 05 Oct 2001
Time = 4:23:49 PM

Access Level = Service
User Id = 4268
Old Value = 46.5 ~F
New Value = 48.0 ~F

Log Entry 2 Condenser - High Pressure Warning Threshold
-----
Date = 05 Oct 2001
Time = 1:36:12 PM
Access Level = Service
User Id = 4268
Old Value = 162.5 Psig
New Value = 225.0 Psig

Log Entry 3 Condenser - Drop Leg
-----
Date = 05 Oct 2001
Time = 1:36:02 PM
Access Level = Service
User Id = 4268
Old Value = Disabled
New Value = Enabled

Log Entry 4 Evaporator - Refrigerant
-----
Date = 05 Oct 2001
Time = 1:35:48 PM
Access Level = Service
User Id = 4268
Old Value = Disabled
New Value = Enabled
    
```

FIGURE 70 - SAMPLE PRINTOUT (SECURITY LOG REPORT)

```

YORK TREND
CHILLER ID 163
© 1997 - 2000 YORK INTERNATIONAL CORPORATION
MON 09 OCT 2000 3:33:47 PM

DATA 1: LEAVING CHILLED LIQUID TEMPERATURE
DATA 2: RETURN CHILLED LIQUID TEMPERATURE
DATA 3: EVAPORATOR PRESSURE
DATA 4: LEAVING CONDENSER LIQUID TEMPERATURE
DATA 5: RETURN CONDENSER LIQUID TEMPERATURE
DATA 6: CONDENSER PRESSURE



| TIME       | DATA 1  | DATA 2  | DATA 3    | DATA 4  | DATA 5  | DATA 6     |
|------------|---------|---------|-----------|---------|---------|------------|
| 3:33:47 PM | 45.5 °F | 55.0 °F | 39.0 PSIG | 95.0 °F | 85.0 °F | 120.0 PSIG |
| 3:33:48 PM | 45.5 °F | 55.0 °F | 39.0 PSIG | 95.0 °F | 85.0 °F | 120.0 PSIG |
| 3:33:49 PM | 45.5 °F | 55.0 °F | 39.0 PSIG | 95.0 °F | 85.0 °F | 120.0 PSIG |
| 3:33:50 PM | 45.5 °F | 55.0 °F | 39.0 PSIG | 95.0 °F | 85.3 °F | 120.1 PSIG |
| 3:33:51 PM | 45.5 °F | 55.2 °F | 39.1 PSIG | 95.1 °F | 85.4 °F | 120.2 PSIG |


```

FIGURE 71 - SAMPLE PRINTOUT (TREND DATA NEW OR EXISTING POINTS)

```

YORK CUSTOM VIEW
CHILLER ID 0
(c) 1997 - 2001 YORK INTERNATIONAL CORPORATION
Mon 21 Jun 1999 1:28:25 PM

Leaving Chilled Liquid Temperature = 45.0 ~F
Return Chilled Liquid Temperature = 55.0 ~F
Leaving Condenser Liquid Temperature = 95.0 ~F
Return Condenser Liquid Temperature = 85.0 ~F
Evaporator Saturation Temperature = 41.0 ~F
Condenser Saturation Temperature = 78.5 ~F
Evaporator Pressure = 70.0 Psig
Condenser Pressure = 140.0 Psig
Oil Pressure = 45.0 Psid
% Full Load Amps = 50 %
    
```

FIGURE 72 - SAMPLE PRINTOUT (CUSTOM SCREEN REPORT)

```
Log Time: Mon 12:45:39 PM 21 Jun 1999
D-P/P= 0.92; Prv Pos= 56; Freq= 39 Hz
Surge Type = Delta P/P Surge
Leaving Chilled Active Setpoint = 45.0 ~F
Leaving Chilled Liquid Temperature = 50.0 ~F
Return Chilled Liquid Temperature = 59.3 ~F
Leaving Condenser Liquid Temperature = 85.0 ~F
Return Condenser Liquid Temperature = 94.9 ~F
Evaporator Pressure = 7.2 Psig
Condenser Pressure = 13.8 Psig
% Full Load Amps = 94 %
```

FIGURE 73 - SAMPLE PRINTOUT (ADAPTIVE CAPACITY CONTROL NEW MAP POINT REPORT)

```
D-P/P = 1.20; Prv Pos = 89; Freq = 58 Hz
D-P/P = 1.41; Prv Pos = 71; Freq = 46 Hz
D-P/P = 0.98; Prv Pos = 73; Freq = 52 Hz
D-P/P = 0.71; Prv Pos = 86; Freq = 39 Hz
D-P/P = 0.86; Prv Pos = 53; Freq = 48 Hz
D-P/P = 1.14; Prv Pos = 76; Freq = 51 Hz
D-P/P = 0.84; Prv Pos = 84; Freq = 37 Hz
D-P/P = 0.99; Prv Pos = 63; Freq = 46 Hz
```

FIGURE 74 - SAMPLE PRINTOUT (ADAPTIVE CAPACITY CONTROL EXISTING MAP POINTS REPORT)