

Production Board (Coca Cola Kilbride) User Manual

Title Page

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1. Introduction

1.1. Scope

The scope of this document covers the operation and maintenance of the Production Board Display System.

1.2. Purpose

The purpose of the document is to provide the relevant information to enable the user to install, operate and maintain the Production Board correctly.

1.3. System

The system consists of a 5 Production Display Boards connected to a PC via RS232/RS485 cables and RS485 Transmitter Box.

The primary function of the Board is to show the number of units produced in the following time periods:

- *LAST HOUR*, running total for each hour
- *CURRENT SHIFT*, running total for current shift
- *CUM DAY TOTAL*, cumulative total for current day
- *LAST SHIFT*, total for last shift
- *PREVIOUS DAY*, total for the previous day

Each Board consists of two sections:

DATABOARD – the **TARGET ACTUAL** section of the Display that monitors the production output on an hourly, shift and daily basis. These values are shown in each of the relevant 6 character fields. The percentage efficiency values are shown on the three character fields on the right-hand side.

DATALINE – this is the 16 character scrolling section at the bottom of the Display and is used to show general information such as company notices, safety messages etc.

All characters are 100mm high and use standard-bright red LED technology.

ProdnSDS, a windows based software package is used to control the information on the Display

Warning

Only trained and authorised personnel should do tests and maintenance on this Display Board System.

2. Installation

2.1. Unpacking

Carefully remove the items from their package and store the packaging safely. After unpacking, inspect the contents for any damage that may have occurred during shipment.

2.2. Hardware

The Display Board(s) should be located in a position where there is unrestricted viewing of the front face of the Board. Also locations where the Board is subject to bright lights or direct sunlight should be avoided. Mount the Board securely and connect the cables as shown in the figure below.

Displays are numbered Board 1 to Board 5 and the Databoard sections are addressed 21H to 25H respectively. The Datalines are addressed 01H to 05H.

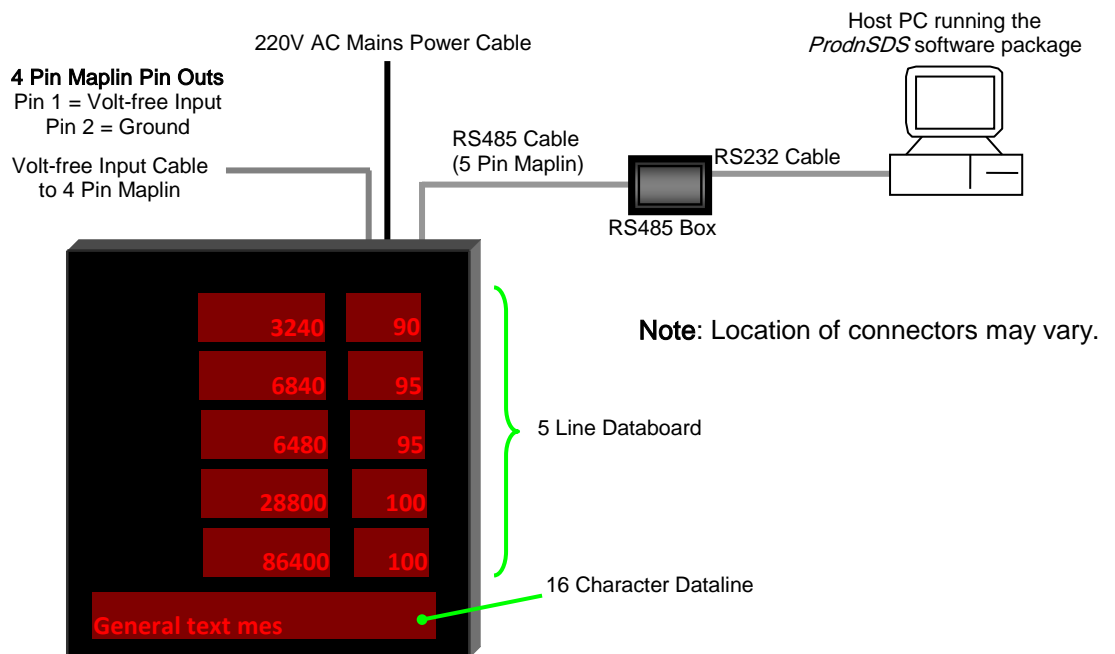


Figure 2.1 – System Configuration.

2.3. Software

The *ProdnSDS* software package is supplied in floppy disk format. Using MS Dos, type 'A:\setup' at the prompt command. To install the *ProdnSDS* software from the floppy disk using Windows 95/98, do the following:

1. Insert the disk in the floppy drive
2. Click the *Start* button and click on *Run*
3. Type 'A:\setup' and click on the *OK* button
4. Follow the on-screen installation instructions.

ProdnSDS.exe and all relevant files should now be installed in the *C:\ProdnSDS* directory.

3. Operating Instructions

The *ProdnSDS* software is a user interactive software package designed to send real time production information to the Display Board. It contains features such as:

- Shows current hourly, shift and daily actuals
- Calculates and displays efficiencies in percentages
- Changeable daily shift start and stop times
- Incorporates Message Editor for Dataline

A Volt-free pulse is received via the Parallel Interface installed in the Display and increments the Hourly, Shift and Daily *ACTUAL* values by 1. When the Parallel Interface increments the *ACTUAL* values, the software calculates and sends a corresponding efficiency value on the Display.

3.1. Sending Information to the Databoard

Double-click on the *ProdnSDS* icon to run the program, *ProdnSDS.exe*.

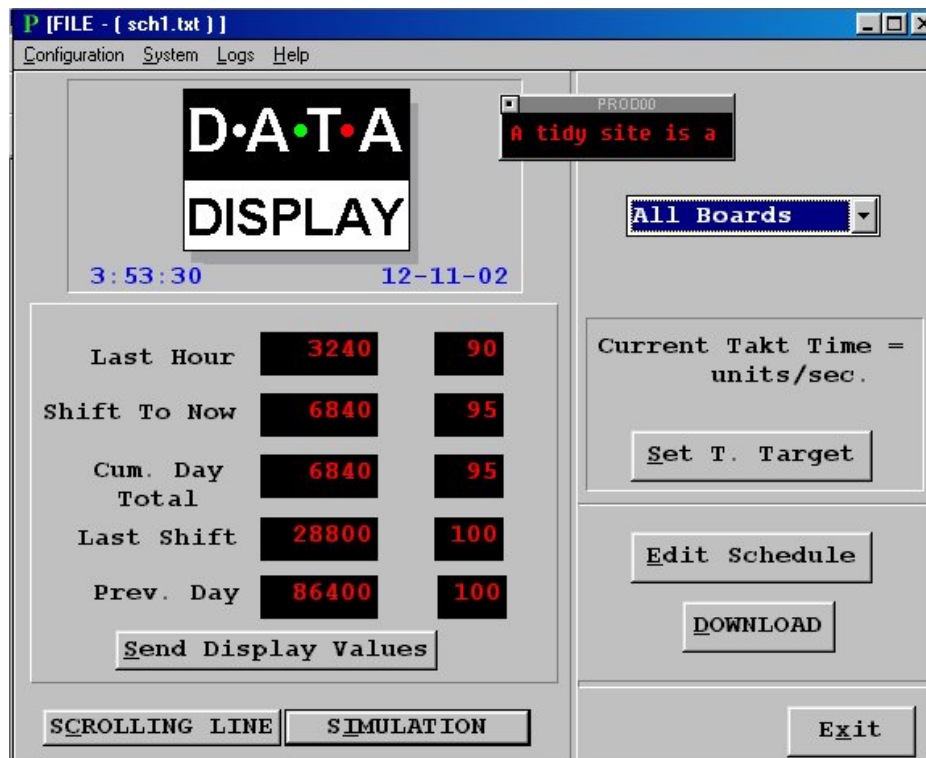


Figure 3.1 - *ProdnSDS* Software Interface.

The User Interface consists of the Menu Bar and the Display Interface with the various buttons and drop-down lists to control the Displays. The *ACTUAL* values may be entered manually or incremented using the Volt-free Parallel Interface installed in the Display. To operate the Display manually, enter the values in the relevant fields and click on the *Send Display Values* button.

3.2. Setting the TAKT Time

The TAKT Time value is set to provide a moving target to which the current production level may be monitored. This value is set at the operators discretion and is ONLY used in the calculation of the percentage efficiency. To set the TAKT Time value, do the following steps:

1. Click on the *Set T. Target* button on the User Interface
2. Enter the SHIFT TIME, e.g. 8 Hours and the SHIFT TARGET value. The SHIFT TIME is needed to calculate the number of seconds in each shift. The SHIFT TARGET value is the target number of products to be produced during the SHIFT TIME.
3. Click on the *Calc Takt* button and click on the *OK* button.

Note: The TAKT Time for this application is the number of units that should be produced every second. Calculation is as follows:

SHIFT TARGET divided by number of seconds of SHIFT TIME = TAKT value, i.e. units per second.

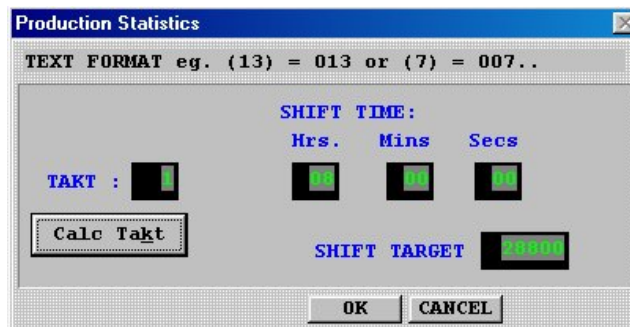


Figure 3.2 – Setting the TAKT Time.

3.3. Editing the Schedule File

To achieve an accurate production calculation, a schedule file is necessary to provide the software with a detailed listing of the Shift Start and Stop times for each Board. This file is in text format and has the file extension .txt, e.g. sch1.txt. The current schedule file in use is shown on top of the User Interface.

Note: Schedule text files must be located in the same directory as the ProdnSDS.exe file. They contain all the Shift Start and Stop time parameters for a full week.

To edit the schedule file, do the following steps:

1. Click on the *Edit Schedule* button on the User Interface.
2. There are three options, *ADD*, *EDIT* or *DELETE* a file available for each Board. To edit a new file, select the Board you wish to make changes to and click on the *EDIT* button, (Fig 3.3).

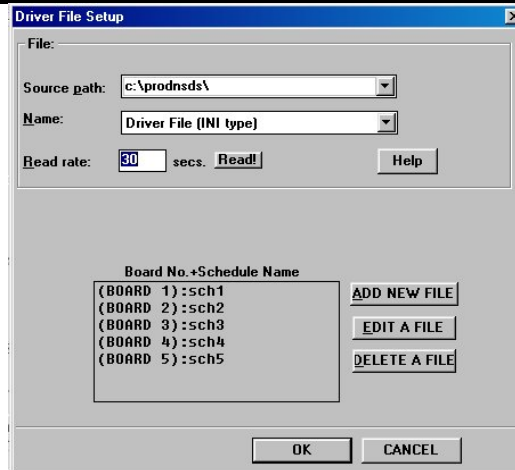


Figure 3.3 – Driver File Setup.

3. Enter the name of the new text file in the dialog box and click on the *OK* button, e.g. Wednesday.txt.
4. Select the weekday from the drop-down *Day of Week* list.
5. Make the changes to the files Start, Stop and Reset times in HHaMM (AM) or HHpMM (PM) format , e.g 08:00, (Fig 3.4).
6. Click the OK button.

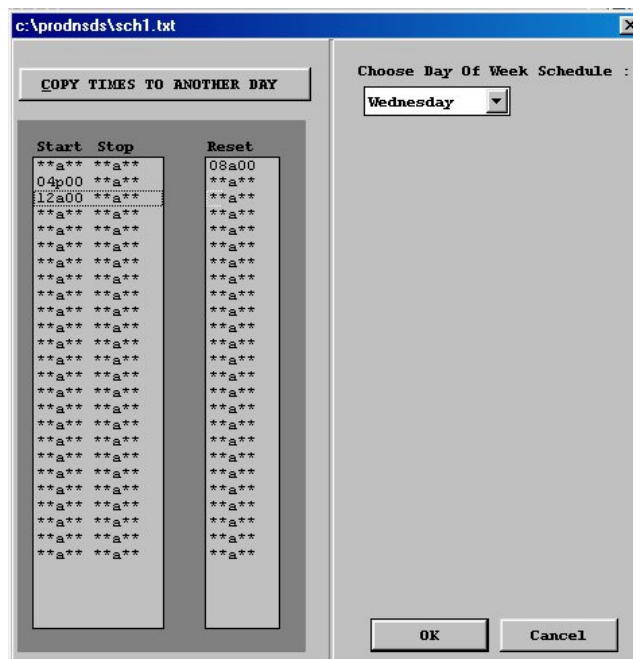


Figure 3.4 – Shift Start and Stop Times.

NOTE: Refer to Chapter 7 for Coca Cola SHIFT TIMES

Note: Firstly, enter a *Reset* time at the beginning of the first shift of each working day. This will reset the Display. Also, if a time parameter is not used, it must have an ***a*** or ***p*** in its field.

In the example shown in Fig 3.4, there are three, 8 hourly shifts. The first shift starts at 8.00am, second shift starts at 4.00pm and the third shift starts at 12.00am.

3.4. Set the Time and Date

To set the current Time and Date, do the following steps:

1. Click on *Start > Programs > ProdnSDS*
2. Click on *Configuration > Set Time*
3. On the dialog box, click on the *Yes* button.

Note: Make sure your PC is set to the correct Date and Time as this is the Date and Time that will be stored in the Displays memory.

3.5. Message Editor

To send text to the 16 character Dataline section of the Display, click on the *Scrolling Line'* button to open the Message Editor Interface. Enter your text message in the text box and click on the '*SELECT*' button. The message is now added to the message list at the bottom.

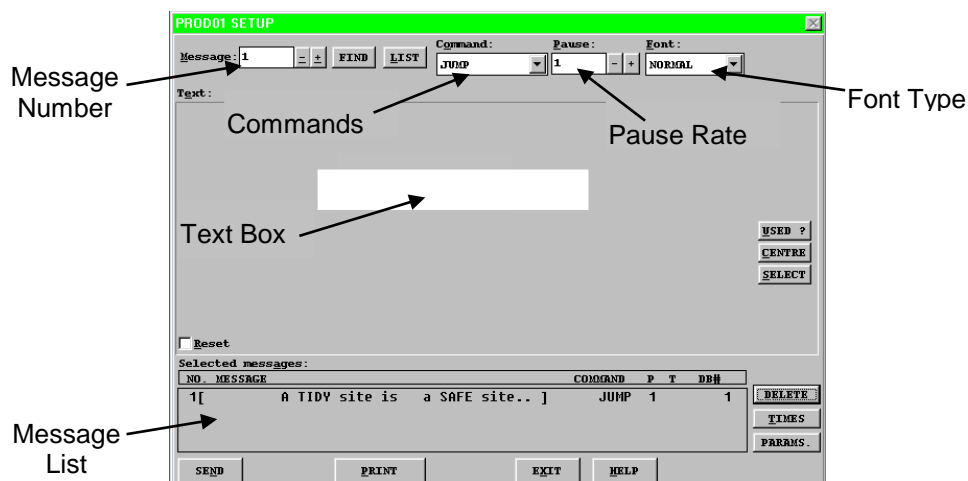


Figure 3.5 – Message Editor

Click on the '*SEND*' button twice to send the new text message to the Display

To edit a text message, click the message number (+/-) to show the message in the text box. Make the changes to the text message and click on the '*SEND*' button. The changes to the message are shown in the message list. Click on the '*SEND*' button again to send the new changes to the Display.

Various Commands, Pause Rates and Font Types can be selected from the drop down lists to give your message more effect.

When messages are sent to the Display, click on the '*SIMULATION*' button to view the text message currently being shown on the Display.

4. System Wiring

4.1. Power Supply

The Display operates from an incoming mains supply of 230 Volts AC. The Live (Brown) and Neutral (Blue) wires are terminated at the 12V PSU via a 10 Amp Fuse and Filter. The Earth (Yellow/Green) is terminated using an M5 ring crimp and is securely fixed to the main Earth point on the chassis of the Display.

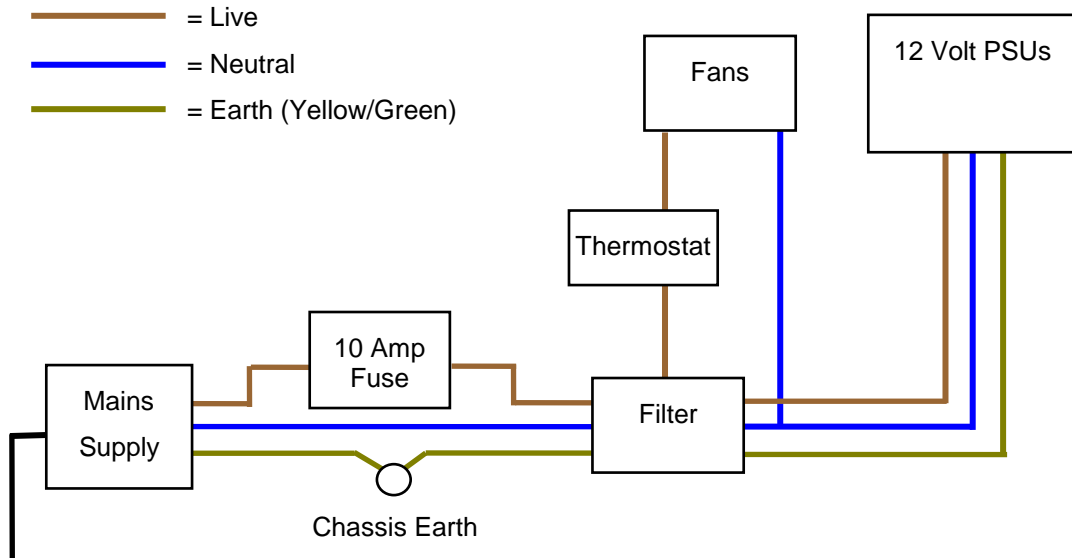


Figure 4.1 - Mains Power Supply Distribution.

4.2. Power Supply Units

Power Supply Units provide the DC power for the various electronic components in the Display Board. The 12 Volt 100 Watt PSU provides DC power for the Logic Board, Parallel Interface and Display Panels.

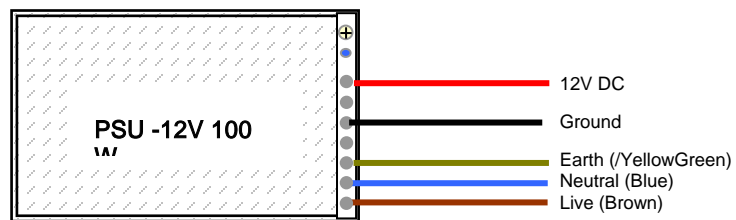


Figure 4.2 – Typical Wiring of a Power Supply Unit.

4.3. Logic Board 2000

The Logic Board is the principal circuit board in the Display. The Board contains the CPU (8 bit Hitachi 6303RP), memory (32K RAM, 32K ROM) and interface circuitry for the Display system. 12V DC power for the Logic is through connector JP18. The RS485 signal is via connector J1. The Parallel Interface cable is connected at JP22.

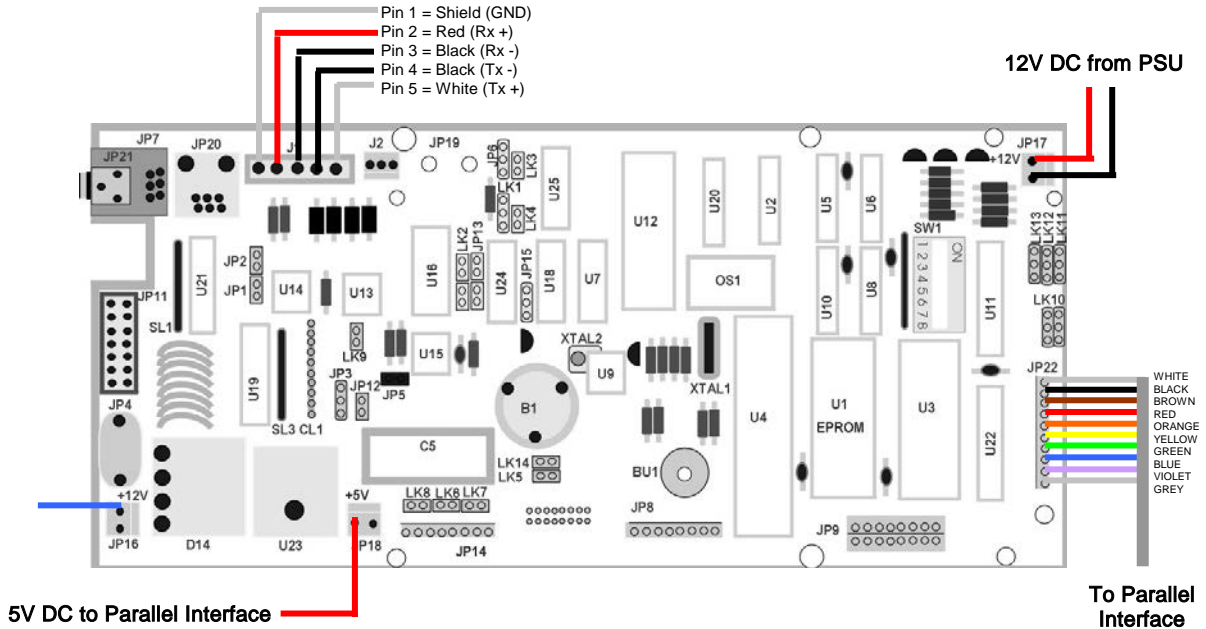


Figure 4.3 – Typical Wiring for Logic 2000.

4.4. Parallel Interface

The Parallel Interface Board is used to detect level changes and cause appropriate responses from the Display. For this application, the input at JL1 is used to increment the Actual value.

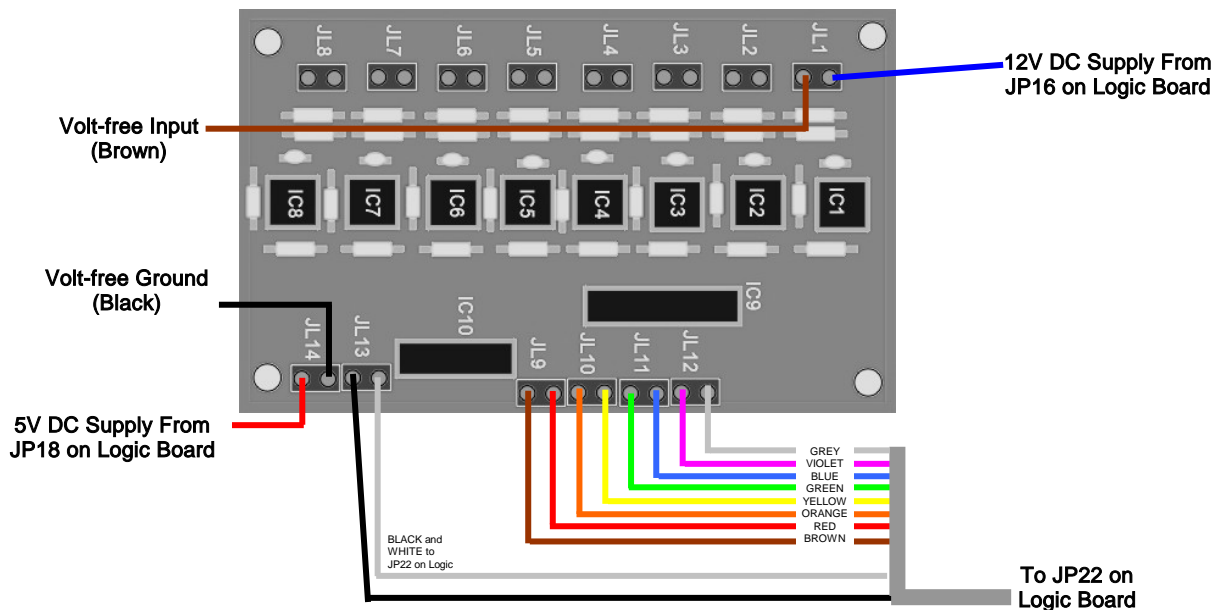


Figure 4.4 - Parallel Interface Wiring.

5. Maintenance

Warning: Disconnect the power supply before you remove any display panels. Make sure work area is clean and clear of tools and miscellaneous items of equipment after maintenance.

5.1. Maintenance Instructions

5.1.1. Preventative Maintenance

Inspect the Display for defects before each operation. Do a visual check for the following:

- Damaged or dirty Lens
- Loose Cables
- Defective LEDs

5.1.2. Cleaning the Display

Routine cleaning of the Display Board is at the discretion of the operator and subject to local conditions. Use damp non-abrasive materials such as a sponge, or lint-free cloth and a soft detergent (washing-up liquid) to clean the Display. Remove difficult stains or marks with a suitable solvent. **DO NOT USE** sharp or metal objects.

5.1.3. Corrective Maintenance

To do maintenance tasks, unscrew the screws at the side of the Display and remove the Side Profile. Remove the Lens carefully and put in a safe place.

Replacing a defective Display Panel:

1. Unscrew the attaching screws and disconnect all relevant wiring
2. Replace the Display Panel and connect all wiring.

Replacing a defective Logic Board:

1. Unscrew the attaching nuts and disconnect all relevant wiring
2. Replace the Logic Board and connect all wiring.

Carefully slide the Lens back on the Display and attach the Side Profile. Clean the Display with a damp cloth and make sure the unit is watertight after all maintenance.

Replacing a defective Fuse:

1. Use a flat-head screwdriver to open the Fuse holder on the Display
2. Replace the Fuse
3. Close the Fuse Holder.

5.1.4. Special Measures following a Stoppage

If the Display is out of service for a long period of time, carefully remove the Display and store it in a cool dry place.

5.2. Handling Equipment

- One working platform
- Standard tool kit

5.3. Special Tools

There are no special tools required.

5.4. Spare Parts

For spare parts, contact your nearest Data Display Customer Service Department.

Make sure to quote the Data Display No. in the Product Specifications section of this Manual and the Serial No. of the Display.

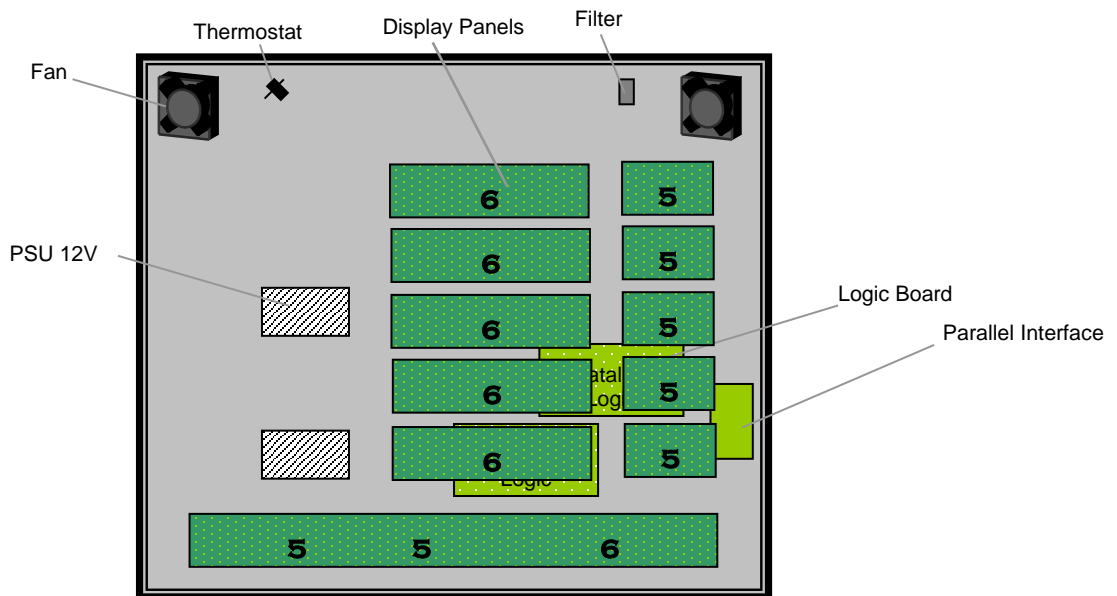


Figure 5.1 – Location of Parts.

| Part Number | Description |
|---------------|----------------------|
| DL405R | Display Panel, 7 off |
| DL406R | Display Panel, 6 off |
| AUTOLOGIC2000 | Logic Board, 2000 |
| AUTOPCBP/I | Parallel Interface |
| D00-TBA | PSU, 12 Volt, 100W |
| D00-453202 | Fan |
| D00-1670 | Filter |
| D00-3324 | Fuse, 10 Amp |

Table 5.2 - Replaceable Parts for Display Board.

6. Product Specifications

| CHARACTERISTIC | VALUE |
|--|--|
| <i>Display Features</i> | |
| Display Type | Production Display Board |
| Model | DB-PRODNBOARD-SPECIAL-HBR |
| No. of Lines per Board | 5 Data board, 1 Dataline |
| No. of Characters per Line | 6 + 3 Data board, 16 Dataline |
| Character Height | 100mm |
| LED Colour | Standard Bright Red |
| <i>Communication</i> | |
| EPROM | COLA20.OBJ, English – 16, 9600 D4.0 |
| Protocol | DB Win |
| Baud Rate | 9600 |
| Data Format | 8 bit, 1 stop bit, no parity |
| Addressing | Databoard – P103 Switch, Dataline – Dip Switch |
| <i>Electrical</i> | |
| Power | 220V AC |
| Fuse Value | 10 Amp |
| <i>Housing</i> | |
| Dimensions (LxHxD) | 1696mm x 1580mm x 75mm |
| Housing | Aluminium, Red, RAL 2002 |
| Front Screen | 5mm Red, Polycarbonate |
| <i>Environmental Conditions</i> | |
| Temperature Range | -5°C to 65°C |
| Humidity Range | 5% to 80% without condensation |

Table 6.1 - Product Specifications.

7. Coca Cola Shift Times

| Day | 1 st Shift | 2 nd Shift | 3 rd Shift | Other |
|-----------|-----------------------|-----------------------|-----------------------|------------|
| Monday | 6am to 2pm | 2pm to 10pm | 10pm to Tuesday 6am | |
| Tuesday | 6am to 2pm | 2pm to 10pm | 10pm to Wednesday 6am | |
| Wednesday | 6am to 2pm | 2pm to 10pm | 10pm to Thursday 6am | |
| Thursday | 6am to 2pm | 2pm to 10pm | 10pm to Friday 6am | |
| Friday | 6am to 1pm | 1pm to 8pm | 8pm to Saturday 3am | |
| Saturday | 6am to 2pm | 2pm to 10pm | 10pm to Sunday 6am | 3am to 6am |
| Sunday | 6am to 2pm | 2pm to 10pm | 10pm to Monday 6am | |

Table 7.3 – Coca Cola Shift Times.

Based on the above Shift Times, your entries should be as follows:

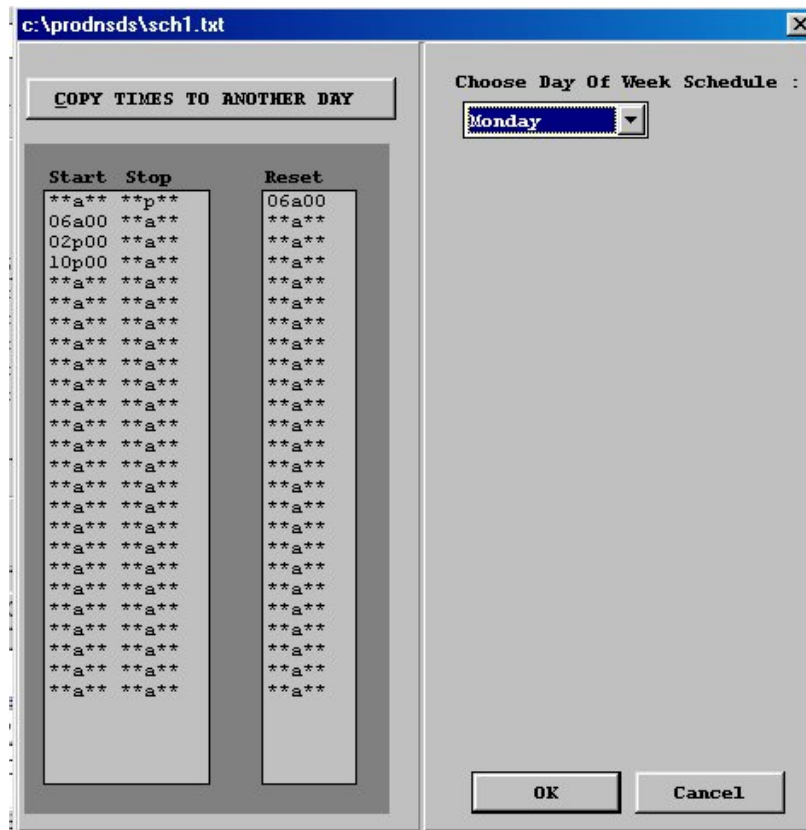


Figure 7.4 – Entries for Monday.

Note: Entries for Tuesday, Wednesday, Thursday and Sunday are same as Monday.

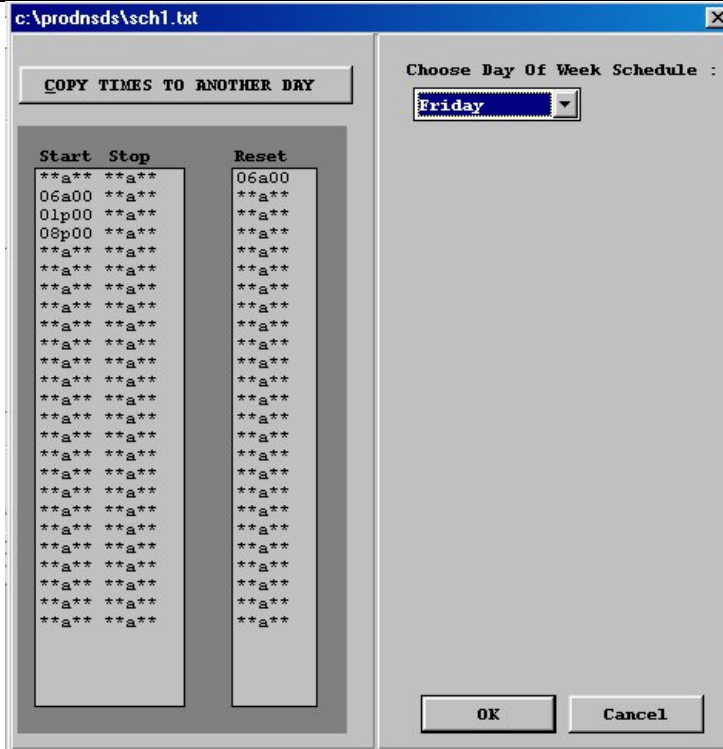


Figure 7.2 – Entries for Friday.

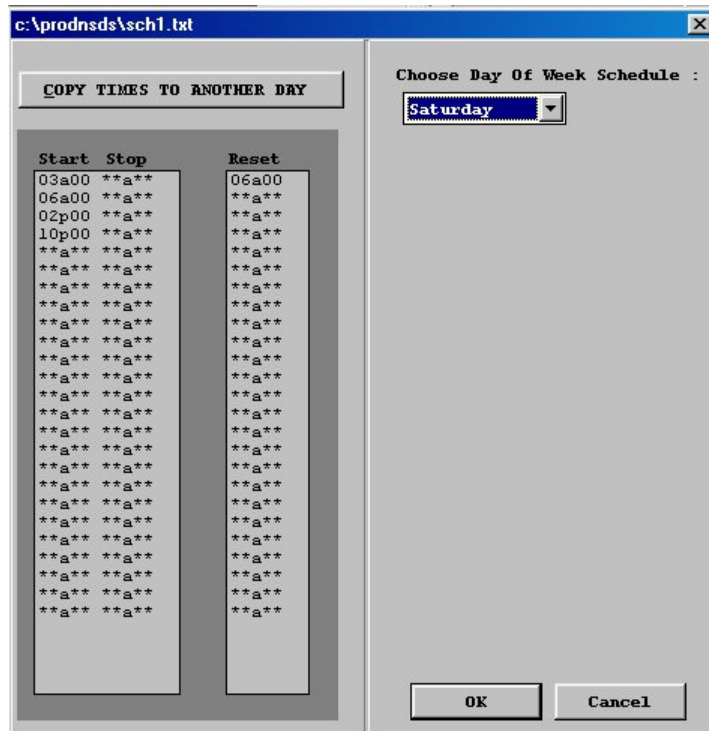


Figure 7.3 – Entries for Saturday.