

Production Board (Coca Cola) User Manual

Title Page

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1. Introduction

1.1. *Scope*

The scope of this document covers the Production Display Board.

1.2. *Purpose*

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

1.3. *System*

The system consists of 9 Production Display Boards, (5 Large, 3 Medium and 1 Small) connected to a PC via an RS485 Converter Box.

The primary function of the Boards is to show the comparison between actual production and target production and display general information.

The Board has two separate sections. The Databoard section shows the shift, daily and weekly *ACTUAL* and *UTILISATION* information.

The sixteen character Dataline section at the bottom of the Board is used to display general text messages.

ProdnSDS, a windows based software package is used to edit and send data to the Board.

Warning

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

2. Hardware

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. In the event of damage, refer to the **Return of Equipment** procedure section of this manual.

2.2. Installation

The Display Boards should be located in a position where there is unrestricted viewing of the front face of the Board. Also avoid locations where the Board is subject to bright lights or direct sunlight.

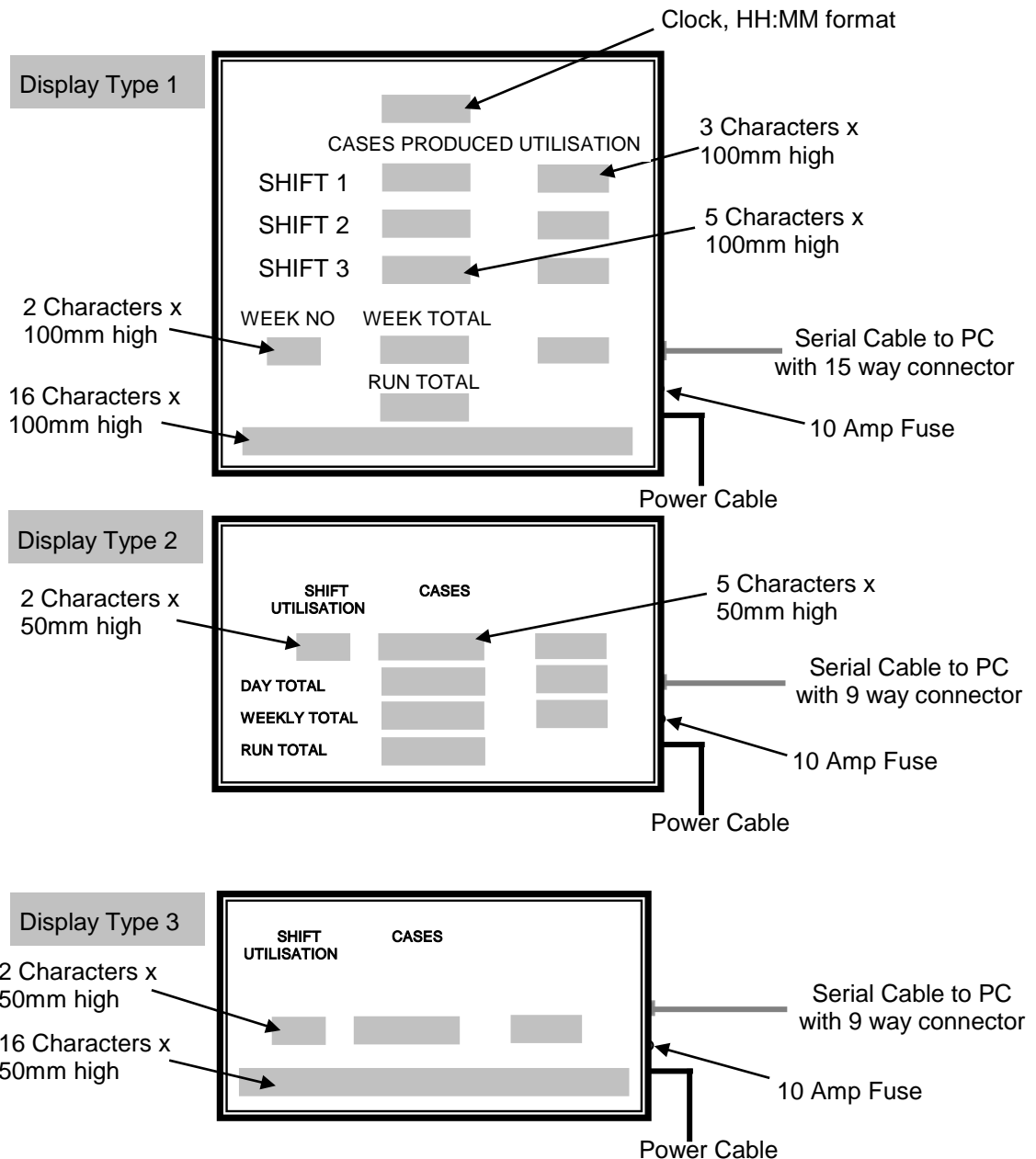


Figure 1 – Display Type 1, 2 and 3.

2.3. System Configuration

Figures 2 and 3 show the configuration for Production Lines 1, 2 and 3. Mount the Boards securely and connect the cables as shown.

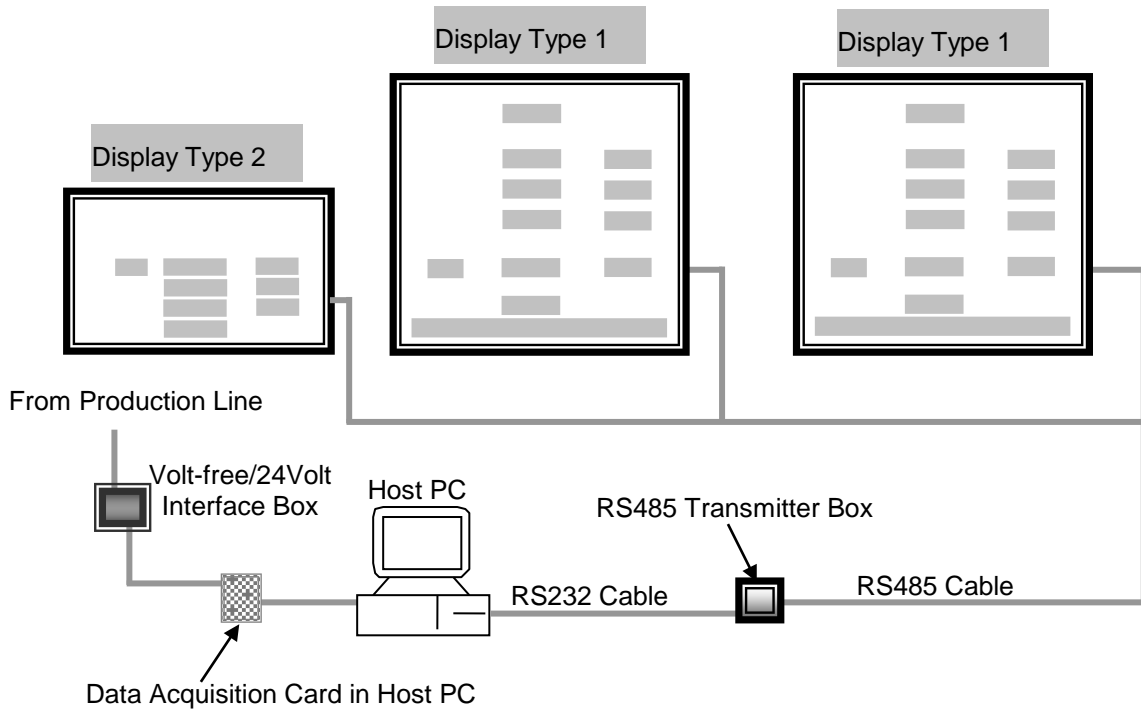


Figure 2 - System Configuration for Line 1 and 2.

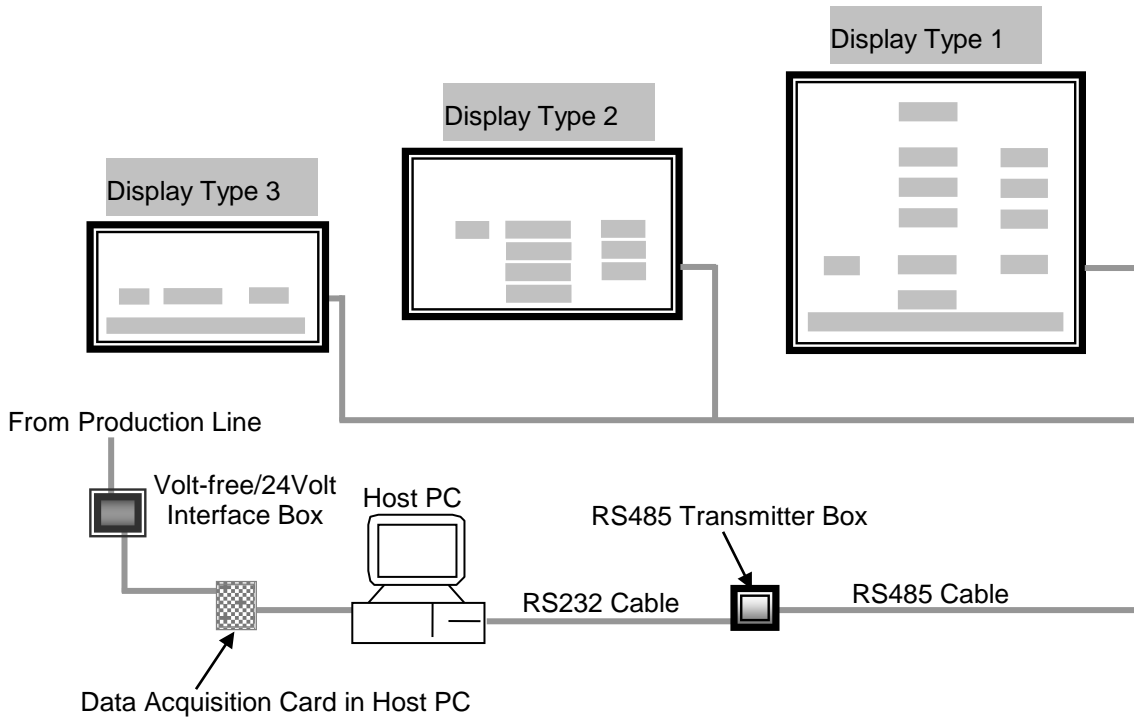


Figure 3 - System Configuration for Line 3.

3. ProdnSDS Software

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

- Changeable Shift Start and Stop times
- Calculates and displays Shift Efficiencies
- Incorporates Message Editor for Dataline

A selectable Volt-free or 24 Volt pulse is received via the Data Acquisition Card installed in the PC and increments the *ACTUAL* value by 1. The software calculates the *ACTUAL* and *TARGET* figures and returns a corresponding *UTILISATION* (Efficiency) value to the Display.

3.1. Installation

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

1. Insert the disk in the floppy drive
2. Click the *Start* button and click on *Run*
3. Type 'A:\install' and click *OK*.

Add *ProdnSDS* to the Start menu or Desktop by creating a short-cut as described in your Windows 95 User Manual.

3.2. Sending Information to the Display

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

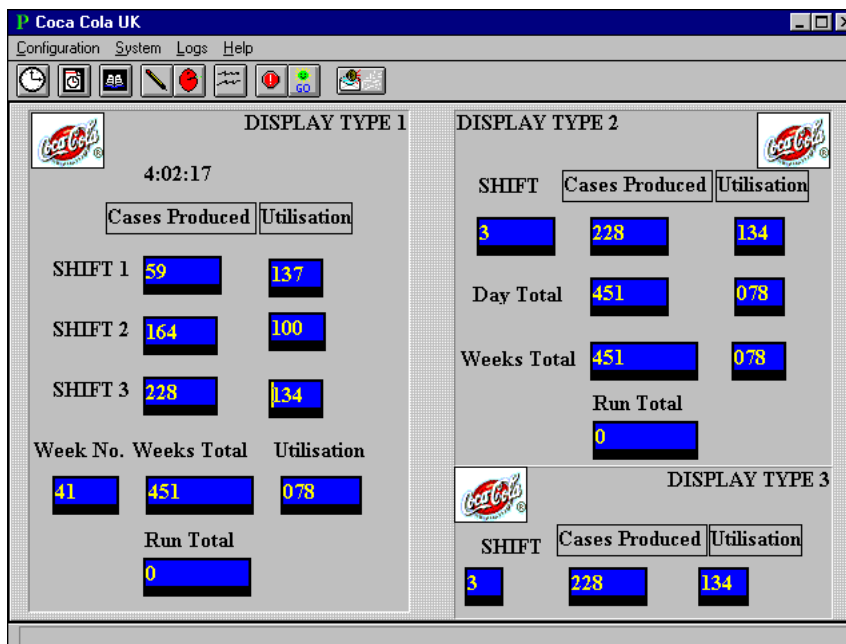


Figure 4 - ProdnSDS Software Interface.

The User Interface consists of the Menu Bar, the Toolbar and the Display Interface. For further information on the commands on the Menu Bar, refer to the SDS User Manual.

The following table describes the actions performed by the Toolbar buttons when clicked.











BUTTON	FUNCTION
	Sends current time to Displays
	Opens the Run Time Setup Interface
	Opens the Shift Start and Stop Times Interface
	Opens the Message Editor for the Dataline
	Simulates the current message displayed on the Dataline
	Opens the Print Preview of Actual and Utilisation values
	Stops the Counter
	Starts the Counter
	Sends values to the Displays

Table 1 - Toolbar Buttons.

3.3. Setting Shift Start and Stop Times

Click on the  button to open the *Shift Start and Stop Times Interface*. Select the 'Weekday' and enter the shift times for Shifts 1, 2 and 3. Click on the 'OK' button.

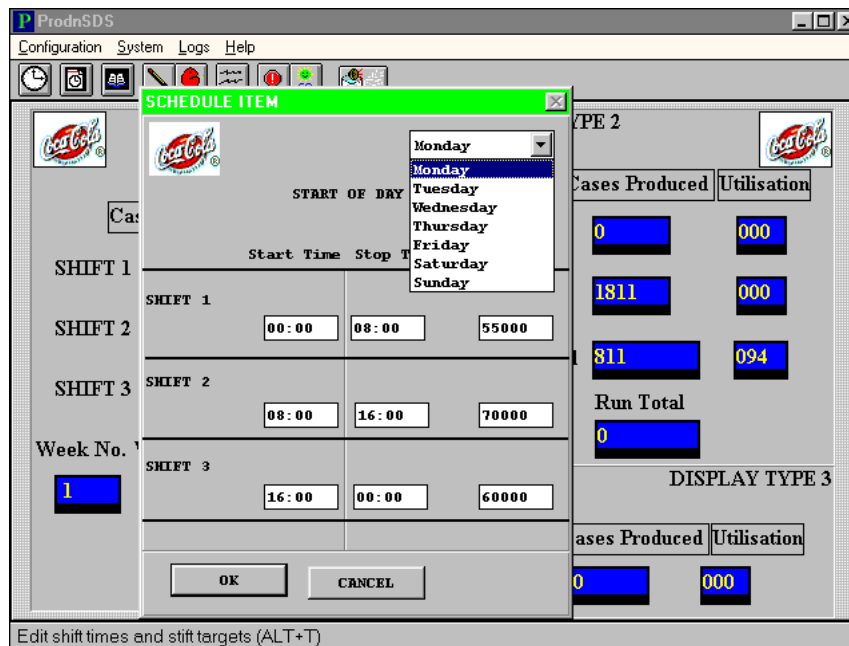



Figure 5 - Adding Shift Times.


3.4. Run Time Setup

This facility allows the user to monitor the Actual production values for a selected time period.

Click on the  button to open the *Run Time Setup Interface* and enter the Start and Stop Times of the time period. The Actual production values are displayed on the *Run* line on the Display

3.5. Sending text to the Dataline

General information such as announcements, notices, motivational messages etc may be displayed on the sixteen character Dataline section of the Board.

Click on the  button to open the *Message Editor*. A complete description of the functions and features available for creating and editing text messages are described in the SDS User Manual.

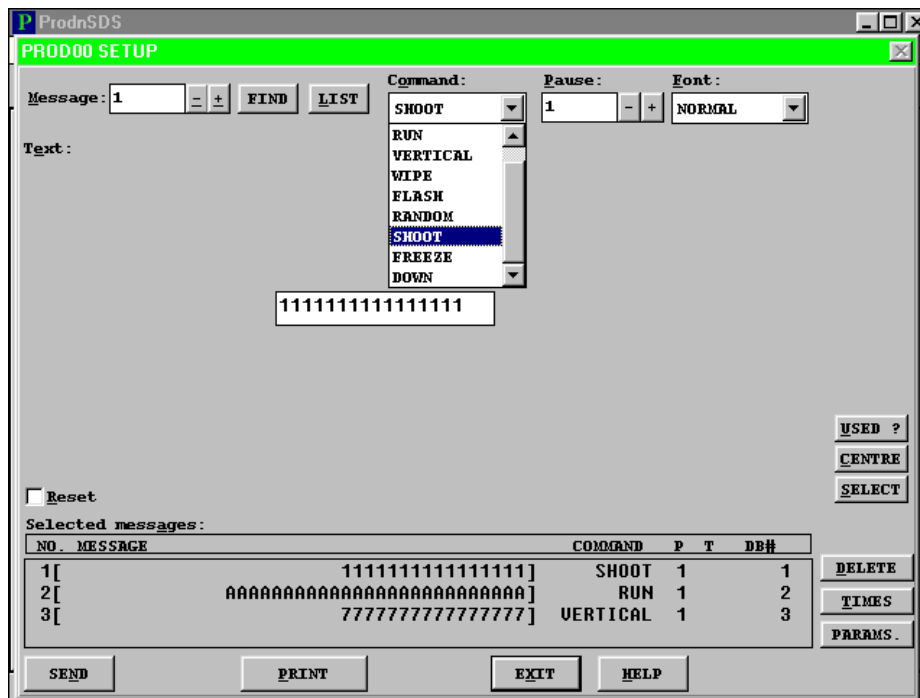



Figure 6 - Message Editor for Dataline.

3.6. Printing

A print out facility is incorporated in the software. This allows the user to preview and print the daily and weekly Actual figures and Utilisation figures.

To preview the current figures, click on the  button.

3.7. Calculating the Utilisation Figures

The Utilisation figure for each shift and the current week is displayed in percentage terms, i.e. 96 on the Display = 96%.

To calculate the Shift Utilisation figures the software uses the following formula:

$$\frac{\text{Cases Produced per Minute} \times \text{Minutes in a Shift}}{\text{Shift Target}} \times 100$$

E.g. **Shift 1** - 10 cases produced per minute in an 8 hour shift, Target set at 4800

Shift 2 - 11 cases produced per minute in an 8 hour shift, Target set at 5000

$$\frac{10 \times (8 \times 60)}{4800} \times 100 = \mathbf{100\% \text{ Utilisation for Shift 1}}$$

$$\frac{11 \times (8 \times 60)}{5400} \times 100 = \mathbf{98\% \text{ Utilisation for Shift 2}}$$

To calculate the Weekly Utilisation figures the software adds the Utilisation value of each shift and calculates the average.

E.g. Shift 1(100%) and Shift 2 (98%) as above.

$$\frac{100 + 98}{2} = \mathbf{99\% \text{ Utilisation for the Week}}$$

4. System Wiring

4.1. Power Supply

The Display operates from an incoming mains supply of 220 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.

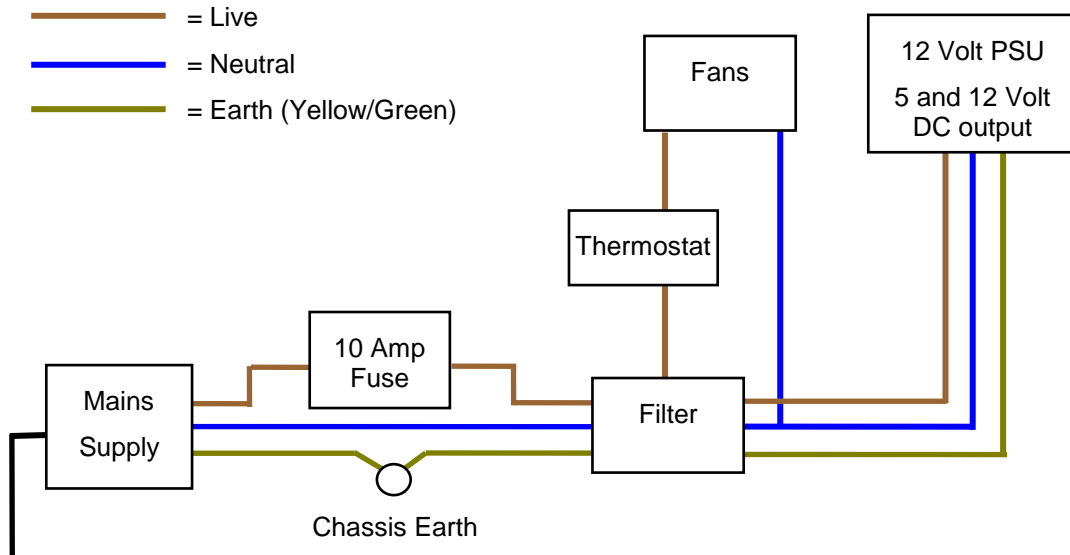


Figure 7 - Mains Power Supply Distribution.

4.2. Parallel Interface Wiring

Refer to the Figure below for pin connections for the Parallel Interface.

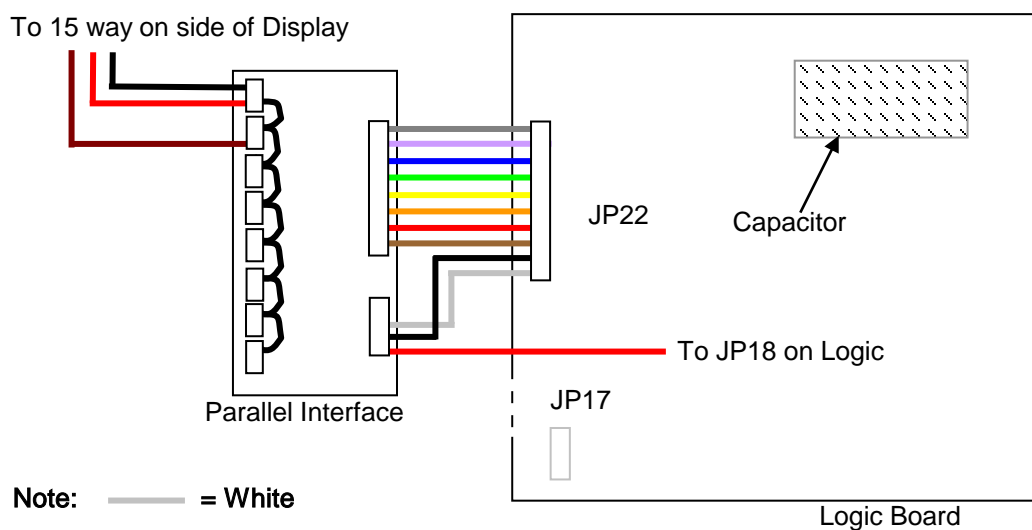


Figure 8 - Parallel Interface Wiring.

4.3. 15 Way Connections

The pin connections for the 15-way connector on the side of the Display are shown in the Figure below.

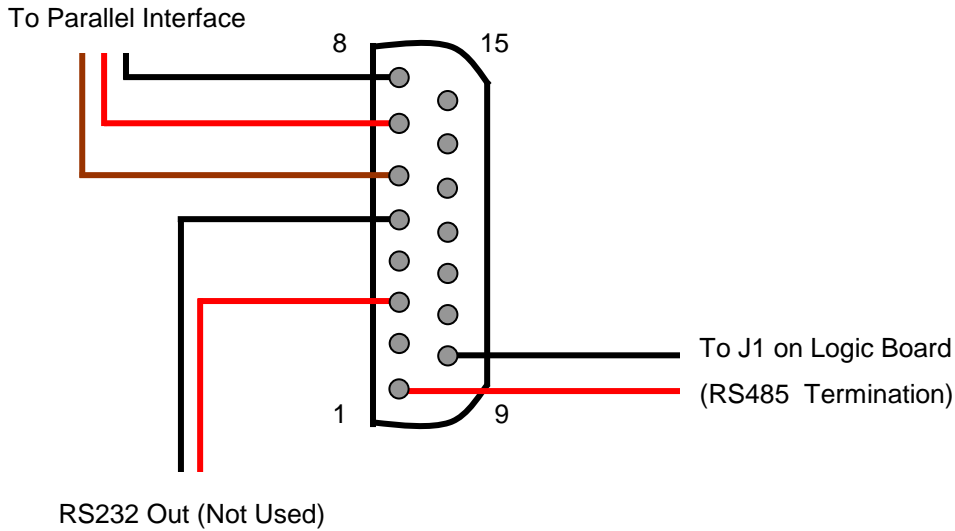


Figure 9 - 15-Way Connections.

4.4. Interface Box, 24V / Volt-free

The Display may be incremented by 24 Volt or Volt-free pulses received from the PLC. For 24 Volt operation, use Pins 1 and 9 on the 15-way connector. For Volt-free operation, use Pins 8 and 15. The GND on Pin 4 of the Maplin is connected to Pin 15 of the 15-way connector.

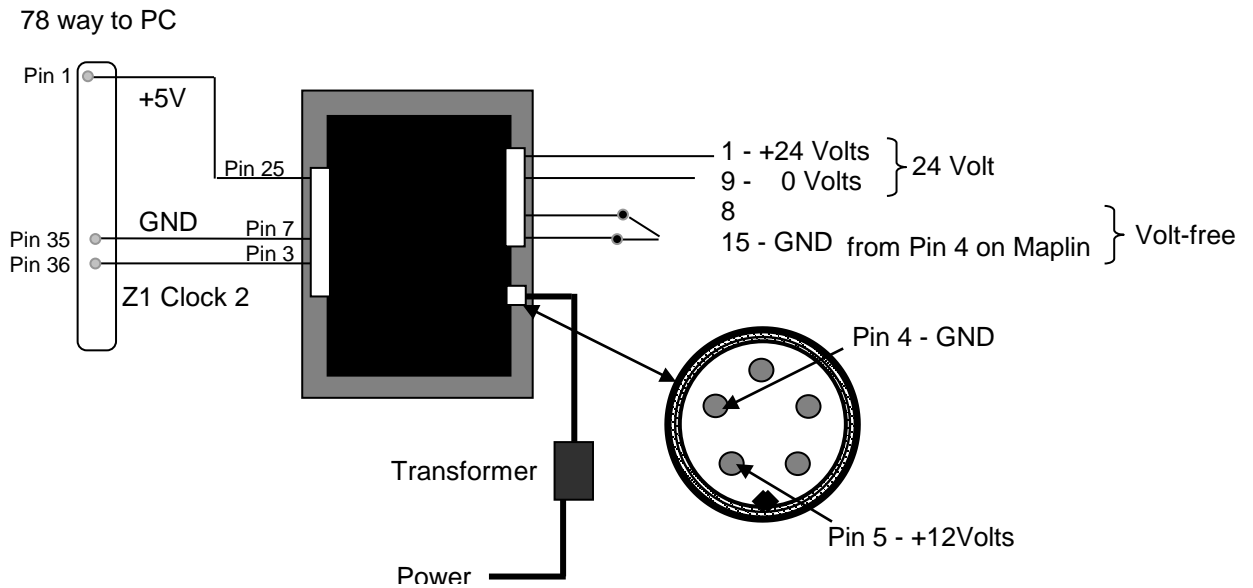


Figure 10 - Pinouts for Interface Box.

4.5. Data Acquisition Card PC212E

The Data Acquisition Card PC212E is provided to improve the speed of data transfer between the PLC and the host PC running *ProdnSDS*. To install the Card and Software, refer to the CD that is supplied with the Card.

Note: Before installing the Card, move the Jumper on J1 from Link 5 to Link10.

5. Maintenance

Warning: Disconnect the power supply before you replace defective parts. Make sure work area is clean and clear of tools and miscellaneous items of equipment after maintenance.

5.1. Maintenance Instructions

5.1.1. 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.

5.1.2. Preventative Maintenance

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

- Damaged or dirty Lens
- Defective LEDs
- Loose cables

5.1.3. Corrective Maintenance

Replacing a defective Display Panel:

1. Remove the side bracket and Lens of the Display
2. Loosen the attaching screws on the Display Panel
3. Disconnect wiring and remove the defective Display Panel
4. Connect the wiring and attach the Display Panel
5. Slide in the Lens and attach the side bracket.

Replacing a defective Logic Board:

1. Remove the side bracket and Lens of the Display
2. Loosen the attaching screws on the Display Panel if required
3. Disconnect wiring and remove the Display Panel
4. Remove the Logic Board by unscrewing the attaching nuts
5. Replace the Logic Board and connect all wiring
6. Slide in the Lens and attach the side bracket.

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.

Clean the Display with a damp cloth and make sure the unit is watertight after all maintenance.

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.

Item	Part Number	Description
1	DL405R	Display Panel, 100cm, 5 Character
2	DL406R	Display Panel, 100cm, 6 Character
3	DL205R	Display Panel, 50cm, 5 Character
4	DL216R	Display Panel, 50cm, 16 Character
5	D00 2216	Power Supply Unit, 12V 150W
6	D00-3324	Fuse, 10 Amp
7	D00 1671	Filter
8	DSA ML 2000	Logic Board
9	D0-RS485	RS485 Board
10	D00 453901	Thermostat, Preset
11	D00 453203	Fan

Table 2 – Spare Parts for Display.

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

5.5. Return of Equipment

Follow the procedures listed below when returning a Display:

1. Disconnect all cables and carefully remove the Display from the mounting.
2. Pack the Display in the original packing.
3. If the original container is not available, pack the Display in a wooden carton. Use cardboard and polystyrene wedges to protect and cushion the Display.
4. Mark carton(s) "THIS SIDE UP" , "THIS SIDE DOWN" and "FRAGILE" where appropriate.
5. Make sure to include with the Display the following information:

NAME

ADDRESS

TELEPHONE NUMBER

SERIAL NUMBER OF DISPLAY

DESCRIPTION OF THE PROBLEM

(A short description is sufficient)

Contact your nearest Data Display Customer Service Department and a suitable collection date and time will be arranged.

6. Product Specifications

CHARACTERISTIC	VALUE
<i>Display Features</i>	
Display Type	Production Board
Display Ref. No.	J01619-1620
Display Panel Type	DL405R, DL406R, DL205R, DL216R
LED Diameter	5mm
LED Colour	Standard-Bright Red
<i>Communication</i>	
EPROM	COKE_COLA V1.0, COKE_A V1.0
Protocol	Dumb Mode and D2.0
Baud Rate	9600
Addressing	Dip Switch
Data Format	8 bit, 1 stop bit, no parity
Character Set	Extended ASCII set
<i>Electrical</i>	
Fuse Value	10 Amp
Main Power Supply	220 Volts
<i>Housing</i>	
Housing Material	Aluminium
Housing Colour	Black
Lens Colour	Red
<i>Environmental Conditions</i>	
Temperature Range	-5°C to 65°C
Humidity Range	5% to 80% without condensation

Table 3 - Product Specifications.