

# Technical Manual

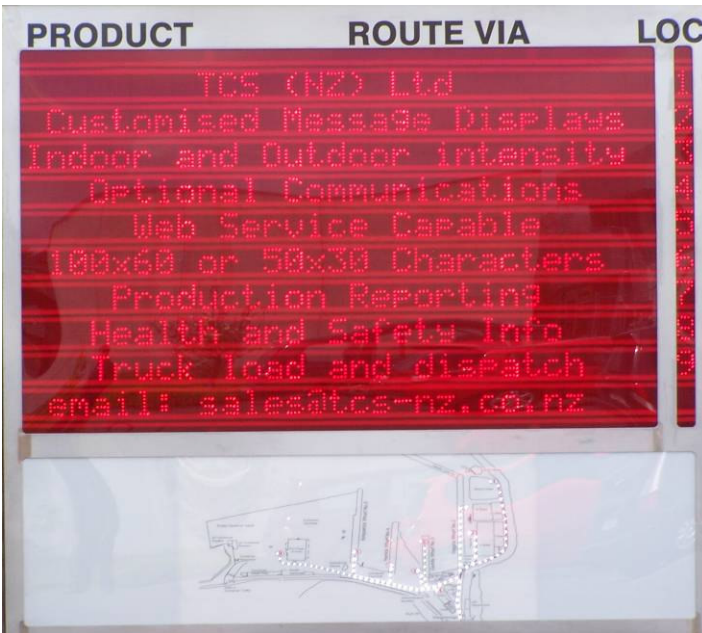
## MO-TCS-WEB-MSD

Rev: 1.1

06/10/2010

Document #: 722-0168-101

### Web Enabled Message Display



### technology | concepts | solutions

## **Revision History**

<b>Revision</b>	<b>Comments</b>
1.1	Original Release

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## PLEASE READ!

This manual is intended to guide qualified personnel in the installation and operation of this product.

The user of and those responsible for applying this equipment must satisfy themselves as to the acceptability of each application and use of the equipment. In no event will TCS(NZ) Ltd be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

It is the responsibility of the user to thoroughly inspect the equipment before accepting the shipment from the freight company. Check the item(s) received against the purchase order. If any items are obviously damaged, it is the responsibility of the user not to accept delivery until the freight agent has noted the damage on the freight bill. Should any concealed damage be found during unpacking, it is again the responsibility of the user to notify the freight agent. The shipping container must be left intact and the freight agent should be requested to make a visual inspection of the equipment.

The unit should remain in its shipping container prior to installation. If the equipment is not to be used for a period of time, it must be stored according to the following instructions in order to maintain warranty coverage:

- Store in a clean, dry location.
- Store within an ambient temperature range of  $-40^{\circ}$  to  $+70^{\circ}$  C.
- Store within a relative humidity range of 0% to 95%, non-condensing.
- Do not store equipment where it could be exposed to a corrosive atmosphere.
- Do not store equipment in a construction area.

Before installation and start-up a general inspection of the mechanical integrity (i.e. loose parts, wires, connections, etc) should be made.

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## Overview

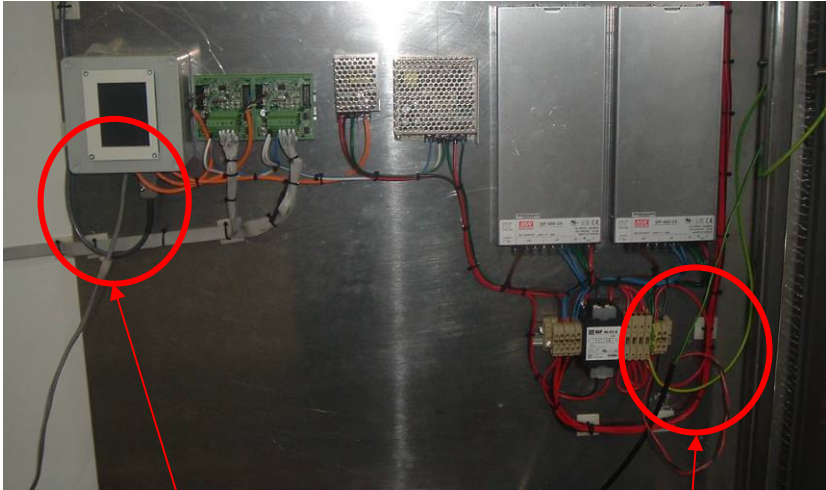
The TCS Web message display can be controlled by Internet Explorer.

# Setup Procedure

This is the procedure you should follow, with reference to the following sections of this manual:

- Mount Display
- Connect Ethernet cable network to interface.
- Connect Power to message display
- Set IP address
- Configure Messages.

## Interface Setup and Connection



Ethernet Connection

Power supply connection

### Ethernet Connector

10/100 Ethernet is connected to the message display by threading the Ethernet cable through one of the glands in the bottom on the left hand side. The Ethernet cable plugs into the bottom of the message display controller as shown in the photographs.



Ethernet connection

## Power Supply Connection

The Message display needs to be connected to 230V 50Hz. Power supply must be connected by a registered electrician. Power is connected to the following terminals.



Phase and Neutral

Earth Stud

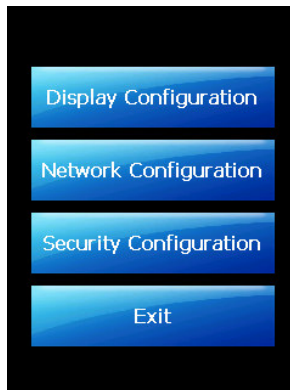
NOTE: Ensure the Earth Bonding Straps are connected to the enclosure base and Doors.

## Configuration

The module configuration is performed from the screen inside the message display. The default screen for the message display is shown below.



To enter the configuration screen press the 'Config' button on the touch screen. This will display the following menu.



The configuration options are explained in the sections below.

## Display Configuration

Flash Rate	200
Column B.P.	14

Exit

There are two display configuration options:

**Flash Rate** – This is the flash and scrolling rate when flashing or scrolling messages are displayed. This is in units of milliseconds.

**Column B.P.** – This sets the position of the column break point when the message display line is in column mode. Typically this is set to 14 which is half way through each line.

## Network Configuration

Ip Address	172.16.55.233
Subnet Mask	255.255.0.0
DNS	172.16.55.250
Gateway	172.16.55.250
Host Name	Mini2440
DHCP	Disabled

Exit

The following network setting can be changed:

**Ip Address** - The TCP/IP address of the message display.

**Subnet Mask** – The subnet mask of the message display.

**DNS** – The domain name server on the network (if there is one).


**Gateway** – The IP address of the gate way server on the network. TCS recommends setting this address if there is a gateway server.

**Host Name** – The network name assigned to the message display.

**DHCP** – An alternative method of assigning the IP address is to use DHCP. However as this contains a web server, TCS does not recommend using this option.

*Note: A recycle of the message display power is required for these changes to take affect.*

## Security Configuration



User Name	displayuser
Password	<input type="text"/>
Web Security	Disabled
<input type="button" value="Exit"/>	

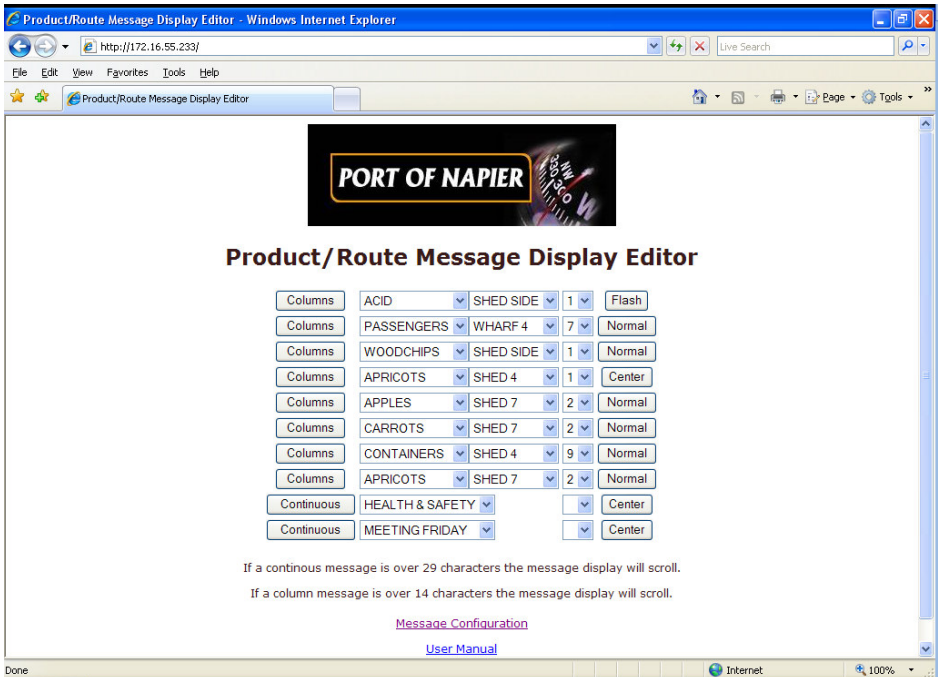
The message display has an option of password protecting the web pages, to prevent unsolicited messages being displayed. The web pages are protected by standard web page security. This can be enabled by pressing the 'Web Security' button, and entering the desired password in the password box.

When prompted by internet explorer to enter username and password, the user name is 'displayuser' and the password is that which has been entered on the above screen.

*Note: when changing web security settings a recycle of power may be required for the changes to take effect.*

# Display Operation

The messages displayed on the message display are controlled by a web page. To access these web pages, Internet Explorer version 7 or 8 is required. To access this web page enter the following hyperlink in Internet Explorer <http://<ip address or host name>>



A description of the options is shown below:

**Columns/Continuous Button** – The message display can be configured to display the main text body of each line (29 characters) as either two columns or one continuous line.

**Message pull down menus** – The message that is displayed is selected from the pull down menus. If the selected message is longer than the display area the message display will automatically scroll the message. Changes to the message displayed on the message display

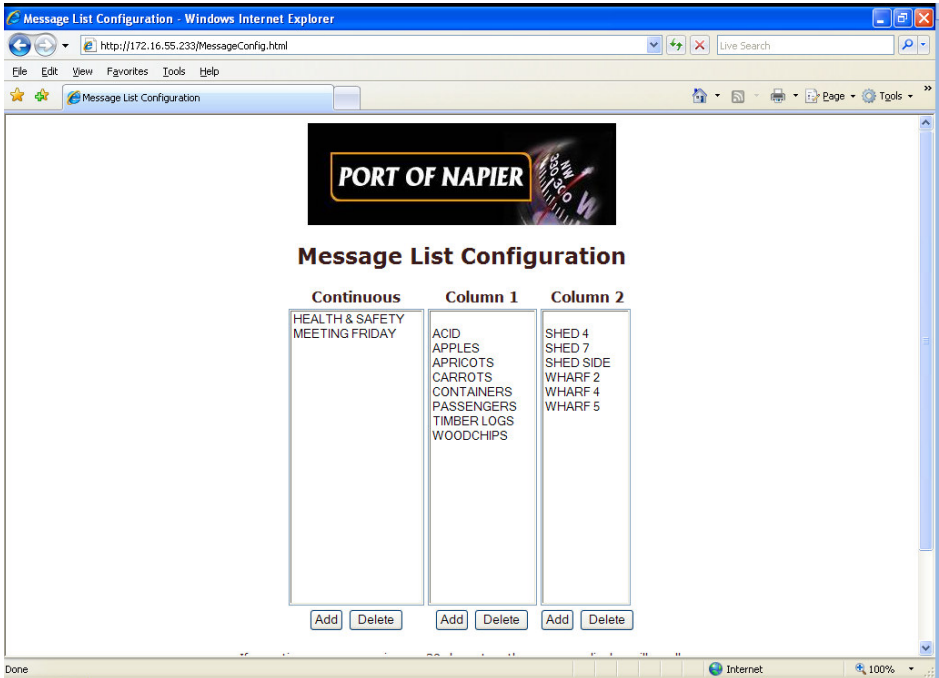
come into effect immediately. If you need to add a new message to the pull down menu select <add new>. Note internet explorer may have a security issue with this, see the section of Message configuration.

**Location Pull Down Menu** – This selects the location of the line and fills in the location column on the message display. It also updates the light up path graphic below the message display. Note: changes to this take effect immediately.

**Normal/Flash/Centre Button** - This button tells the display to display the line as either Normal (left justified), Flashing or Centered.

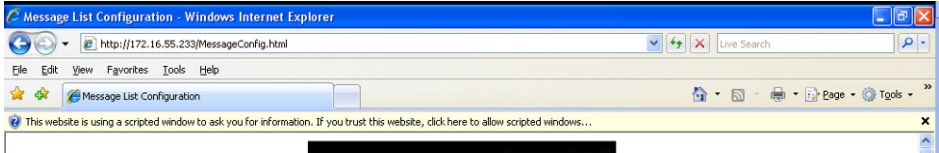
## Message Configuration

The list of messages inside the pull down menu can be added to by either selecting, <add new> or opening the 'Message Configuration' web page.



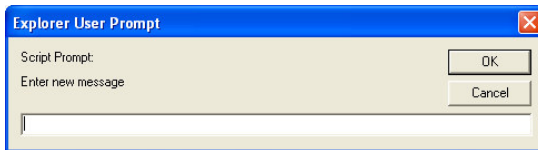
By pressing the 'Delete' button messages can be deleted.

To add a message, press Add Message. If the following message appears on the top of your internet explore page do the following:



- 1) Press 'click here to allow scripted windows...'
- 2) Press on the 'Temporary allows scripted windows button'
- 3) Press Add again.

When pressing Add, the following pop up window appears.



Enter in the new message and press 'OK' and the message should appear in the list.

# General Information

## Power Supplies

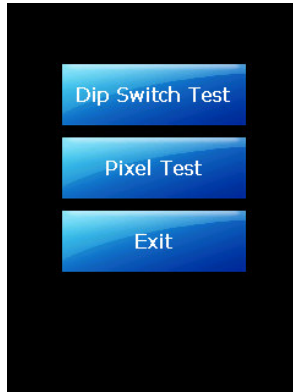
The message display has four power supplies inside it.

- Two 230VAC to 24 VDC supplies, to supply the message display characters. Each one supplies half of the message display.
- Two 230VAC to 5 volt supplies, the smaller of the two for supplying the controller electronics, and the larger for supplying the light up graphic at the bottom.



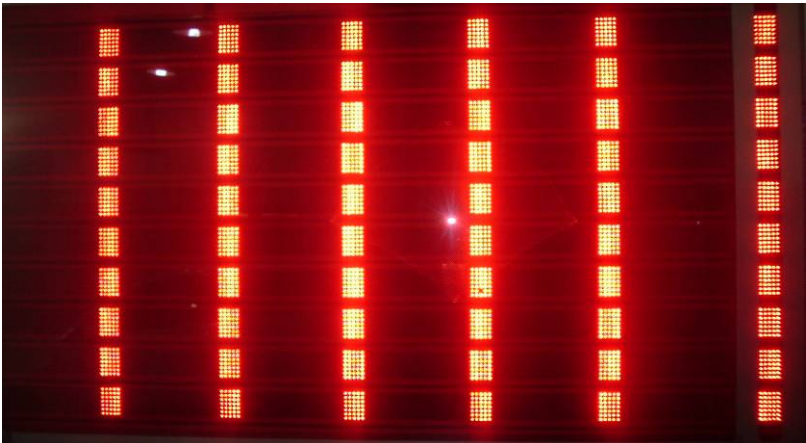
5v for controller electronics    5v for light up graphic    24v for display led's

## Test Screens



From the test screen the following tests can be performed:

**Dip Switch Test** – This displays the following screen which is a check that the display boards note addressing is set correctly. See section on display board settings.



**Pixel Test** – This displays the following test pattern. This is used to identify any fault pixels.



## Display Board Settings

The message display is constructed of 60 five character display boards, 30 of which have a matrix controller PCB mounted to the back of them, and 30 are slave boards. RS-232 communications comes from the message display controller (the touch screen device) and is sent to message display board One. Message display board One retransmits the data via RS-485 to the remaining display boards. The display boards are addressed by their first character and the corresponding dipswitch settings. The table below shows the corrected dip switch settings:

Display board number	Character number	Dipswitch values															
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3	10	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
5	20	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
7	30	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
9	40	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
11	50	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
13	60	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0

15	70	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
17	80	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
19	90	0	1	0	1	1	0	1	0	0	0	0	0	0	0	0
21	100	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
23	110	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0
25	120	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0
27	130	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
29	140	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0
31	150	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0
33	160	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
35	170	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0
37	180	0	0	1	0	1	1	0	1	0	0	0	0	0	0	0
39	190	0	1	1	1	1	1	0	1	0	0	0	0	0	0	0
41	200	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0
43	210	0	1	0	0	1	0	1	1	0	0	0	0	0	0	0
45	220	0	0	1	1	1	0	1	1	0	0	0	0	0	0	0
47	230	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0
49	240	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
51	250	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0
53	260	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
55	270	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0
57	280	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
59	290	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0

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