LDC EQUIPMENT

1306P VMS

Operation and Programming

The Programmer Front Panel

CAUTION!

!!! Always use the VMS unit in a safe manner. Do not attempt to use the programmer unit at any time while the vehicle is in motion. !!!

Solar panels should be cleaned weekly (more often depending on environmental factors).

Sign should <u>not</u> be raised unless stabilizer legs have been lowered.

In this manual any buttons on the programmer unit that are to be pressed are shown in reverse text, for example POWER.

The sign and programmer units cannot be damaged by incorrect operation of the programmer unit. If at any time the programmer unit becomes unresponsive first press the POWER button. If there is no response please check that the battery voltage is above 10 volts then disconnect the power from the sign (by removing the battery fuse or other method) for a period greater than 30 seconds and reconnect. If the battery voltage is below 10 volts the unit will need to be recharged by exposing the solar panels to direct sunlight or connecting a suitable battery charger.

The sign and programmer unit contain no user serviceable parts. Should a malfunction occur, please contact the supplier of the system for assistance. Any tampering with the internal parts of the sign or programmer unit will void the warranty.

Important Note

At any time, you can exit a mode or programming screen by pressing the NO/EXIT button until the normal screen is shown.

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CHAPTER 1

VMS Operation

1. Power

To turn the sign on or off simply press the POWER button at any time.
The sign is on whenever the screen on the programmer unit is on.

If the power button is pressed in programming mode any changes not saved will be lost.

2. Message Selection

To change the message on the sign press the MSG SELECT button on the programmer and then use the cursor ↑ and ↓ buttons to select the appropriate message, then press the RUN MSG button to activate the message.

3. Radar Speed Selection (Only Applies to units with radar fitted)

To change the speed at which the radar message is triggered, press the MENU button and then use the number keys to enter the 3-digit speed at which the radar message is to be shown. If the speed only has 2 digits, put a 0 in front of the speed to make 3 digits. Once the 3 digits have been entered, the unit will return to the main screen or running the message.

4. First Principles (Please read this if programming the sign for the first time)

Messages are made up from screens; a message is a one or a series of screens that are displayed in sequence.

A screen cannot be run, it must be put into a message.

There are 16 messages that the user can edit; these are numbered U01 to U16.

A message comprises from 1 to 5 screens and the timing with which they are displayed. Timing consists of a display time for which the screen appears on the sign and a blank time for which the sign is blank between screens. If you wish screens to be displayed sequentially without any pause between them, set the blank time to 00.0.

To make a custom message using screens that are not already programmed there are 2 steps required.

Step 1. Create the screen (or screens) with the text of your choosing in the layout you decide. To do this, please follow the instructions in section 5 of this manual.

NOTE: When editing the screens, the top half of the controller display gives an accurate representation of what will appear on the message board when the message is run.

Step 2. Create a message containing the screen (or screens) you have just made and/or other preset screens or graphic screens. These screens will be shown in sequence and up to 5 screens can be shown per message. The process for this is shown in section 6 of this manual.

If the first screen in a message is set to LOOP MESSAGE then the message cannot be selected. This is done to save time when selecting the messages.

Step 3. Run your Message.

Use the message select key to select your message, and then the run message key to activate the message to the large screen.

5. Screen Editing

There are 16 screens that the user can edit, these are called the user screens and numbered U01 to U16.

To edit a screen press the MSG EDIT button and then enter the screen edit password, which is 2222. You can then select which of the user screens you wish to edit using the cursor ← and → buttons.

Then press the YES/ENTER button to edit the screen.

To clear the screen in preparation for a new message press the MENU/CLR button three times in a row.

The cursor ↑ and ↓ buttons can now be used to move the cursor up and down and use the ← and → cursor buttons to move the cursor left and right.
The top item in the screen is the screen name that is 8 characters long. Use the ← and → cursor buttons to move the cursor and press the number buttons to edit the name. To get the alphabetic character shown underneath the numbers press the number button repeatedly until the desired character is shown, a blank or space character is two presses of the 0 button.

A screen can be from 1 to 3 lines of text of up to 8 characters per line. Press the TEXT SIZE button to select the desired number of lines. The display will mimic the changes so that you can see the results of the changes you make.

The remaining items in the screen edit mode are the text lines. Use the cursor ↑ and ↓ buttons to select which line you wish to edit and use the ← and → cursor buttons to move the cursor. Press the number buttons to edit the text. To get the alphabetic character shown underneath the numbers press the number button repeatedly until the desired character is shown. Punctuation and other special characters are accessed using the 0 key.

The text will auto center on the screen as you type, if the text is not centered press the MENU/CLR button and move the cursor to remove unwanted spaces on the line. To align the text to the left side of the screen move the cursor to the last place on the line and press to 0 key twice to place a space character.

HINT: It is easier to look at the preview message at the top of the screen when entering text rather than reading the text under the cursor.

To save your changes you must press the YES/ENTER button to exit the screen edit mode, to abandon your changes press the NO/EXIT button. If the power button is pressed at any time, any changes will be lost and the unit turned off.

NOTE: The top half of the screen gives an accurate representation of what will appear on the message board when the message is run.

6. Message Editing

To edit a message press the MSG EDIT button and then enter the message edit password, which is 1111. You can then select which of the user messages you wish to edit using the cursor ← and → buttons. Then press the YES/ENTER button.

The cursor ↑ and ↓ buttons can now be used to move the selection bar up and down. To edit the highlighted item, use the number buttons or ← and → cursor buttons.

To clear the message in preparation for a new message press the MENU/CLR button three times in a row.

The top item in the message is the message name that is 8 characters long, use the ← and → cursor buttons to move the cursor and press the number buttons to edit the name. To get the alphabetic character shown underneath the numbers press the number button repeatedly until the desired character is shown.

The next 5 items are the numbers and names of the screens in the message; there can be from 1 to 5 screens in a message. When no additional screens are required, change this item to display LOOP MESSAGE. Use the ← and → cursor buttons to change these settings.

The last item is the message display and blank times. These are each three digits in length with the maximum time of 19.9 seconds and a minimum time of 00.0 seconds. Use the number keys to enter the Display Time (DT) and the Blank Time (BT), use the ← and → cursor buttons to move the cursor and the number keys to enter the desired times. Punctuation and other special characters are accessed using the 0 key.

To save your changes you must press the YES/ENTER button to exit the message edit mode, to abandon your changes press the NO/EXIT button.

The screens are broken into three types (Preset, User and Graphic.) The Preset screen numbers begin with the letter P, User screen numbers begin with the letter U and the Graphic screen numbers begin with the letter G.

CHAPTER 2

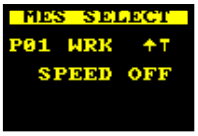
Step by Step Example: Run a Message

1. Plug in the Programmer and Press the Power Button.

You will see this screen briefly, indicating the software version

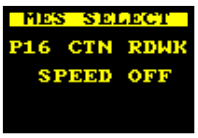
Then this screen, indicating that the sign is not running

2. Press the MSG SELECT Key.



This screen shows the selected message and message name

3. Use the Left and Right Arrow keys to select the desired message.



Here we see the desired preset message shown

4. Then Press the RUN MSG key and the message will run.

Finally we see the 2 screens of Message P16, CAUTION, ROAD WORK AHEAD

CHAPTER 3

SMS Programming

Notes:

If there is no 'Enter' key on your phone, a '*' can be used in its place.
If your phone can not send a '@' character, a '%' can be used in its place.
All Commands are 2 letters followed immediately by any data associated with the command.

All data is followed by an 'Enter' or the '*' character, commands with no data are followed directly by an 'Enter' or the '*' character.

In this document the *italic* font indicates any text which is to be typed as part of an SMS.

Start of Message (PIN Number)

Each message to the sign must begin with the correct PIN number for the sign followed by an 'Enter' or the '*' character.
*xxxx** The PIN number for the sign followed by an '*' or 'Enter'

Example where the PIN Number is 1234
1234 The PIN number for the sign followed by an '*' or 'Enter'

Commands

Command Function	Command Code
Turn Off (Blank Display)	OF
Turn On (resume message last displayed)	ON
Request Messages Names	QM
Select Message	SM
Request Status (Query Status)	QQ
Message Store	MS
Message Erase	ME
Message Store and Run	MR

Turn Off

To stop the display of messages and put the sign into a standby mode, send the OF command as follows.

OF

The sign can be turned on again by sending a Select Message command or ON command.

Turn On (resume)

To tell the sign to display the same message as last selected, send the ON command as follows.

ON

Query Message Names

To request the sign to send you the name of a message in memory, send the QM command. The command is followed by a two digit number representing the number of the message of which you wish to know the name.

QMxx

Request Status (Query Status)

To request the sign to send you the current state of its operation and batteries we send the QQ command. As this command has no data it is immediately followed by 'Enter' or the '*' character.

QQ

Select Message

To select a message to show on the screen you need to send the following SMS text.

SMxx

The xx is replaced by the 2 digit message number to be selected as in the following example. The preset messages are numbers 01 to 29. User Messages are numbers 30 to 48 and the SMS messages are numbers 49 to 53.

SM30 Select Message 30 which is User message number U01

Message Store

The Message Store command has data that must follow exactly the format described below.

The Command MS followed by the SMS message number to store as one digit (1-5).

The first line after the MS command is the Name for the message. This name is limited to 8 characters.

The following lines are now part of the message. The sign will allow 4 lines per screen with a maximum of 10 characters per line. To end a screen before the lines are all filled leave a blank line and the sign will move onto the next screen, the blank line will not be a part of the message. To leave a blank line in the message put a 'Space' character on the line.

MS1	Command to store the message in SMS slot 1
TEST	Name of message
TEST	First line of first screen
MESSAGE	Second line of first screen
	Blank line (end of first screen)
SCREEN	First line of second screen
TWO	Second line of second screen
	Blank line (end of second screen)
@@	End of message

NB: There must be an 'Enter' or '*' after the final '@@'.

Displaying Graphics

Graphics can be displayed by entering @Gxx on the first line of a screen and the sign will display the relevant Graphic number as represented by the xx. To end the message put '@@' as the first characters after an 'Enter' or the '*' character.

Display/Blank Times

To set the display time place an @Dxx as the first characters after an 'Enter' or the '*' character where the xx is a two digit number representing tenths of a second. To set the off time between displays place an @Bxx as the first characters after an 'Enter' or the '*' character where the xx is a two digit number representing tenths of a second. There are a maximum of 5 screens allowed per message, however the limit for an SMS message is 160 characters and this must not be exceeded.

Message Store and Run

This command is identical to the above command with the exception that the newly stored message is run immediately.

MRx

(Same as previous command except *MR* replaces *MS* in the command).

Message Erase

The Message Erase command has data that must follow exactly the following format:

The Command ME followed by the SMS message number to erase as one digit (1-5).

MEx

ME1	Erase the SMS message number 1

Demo Message

Here is an example of a message with 2 text screens and a graphic.

1234	PIN NUMBER OF SIGN
MR1	COMMAND TO RUN THE MESSAGE
TEST	MESSAGE NAME (NOT SHOWN ON SCREEN)
VMS	LINE 1 OF SCREEN 1
TEST	LINE 2 OF SCREEN 1
MESSAGE	LINE 3 OF SCREEN 1
TESTING	LINE 1 OF SCREEN 2
123	LINE 2 OF SCREEN 2
RETURN	LINE 3 OF SCREEN 2 (BLANK, END OF SCREEN)
@G01	SCREEN 3 IS GRAPHIC 01
@@	END OF MESSAGE

Here's the same message using the '*' instead of the 'Enter'.

*1234*MR1*TEST*VMS*TEST*MESSAGE*TESTING*123**@G01*@@**

Preset Messages

SM01	WORKMAN	↑T	SM16	CAUTION, ROADWORK AHEAD	
SM02	WORKMAN	T↑	SM17	PREPARE TO STOP	
SM03	WORKMAN	↑TT	SM18	EXPECT DELAYS	
SM04	WORKMAN	TT↑	SM19	PREPARE TO STOP, EXPECT DELAYS	
SM05	WORKMAN	↑↑T	SM20	CHANGED TRAFFIC AHEAD	
SM06	WORKMAN	T↑↑	SM21	DETOUR AHEAD, REDUCE SPEED	
SM07	WORKMAN	↑TTT	SM22	TRAFFIC HAZARD AHEAD	
SM08	WORKMAN	TTT↑	SM23	EXIT CLOSED	
SM09	WORKMAN	↑↑TT	SM24	ROAD CLOSED	
SM10	WORKMAN	TT↑↑	SM25	WORKMAN	↑T↑
SM11	WORKMAN	↑↑↑T	SM26	WORKMAN	↑TT↑
SM12	WORKMAN	T↑↑↑	SM27	WORKMAN	↑T↑↑
SM13	FLAGMAN		SM28	WORKMAN	↑↑T↑
SM14	LEFT ARROW		SM29	ROAD WORK ON RAMP	
SM15	RIGHT ARROW				

Character Translations to Symbols

Due to differences in some phones, and the fact that most phones do not have symbols for lanes and arrows, we need to convert some characters to be able to configure the VMS correctly. Below is a table of character conversions you need in order to configure the VMS correctly.

Character Translations to Symbols

Character	SMS SYMBOL	DISPLAYED SYMBOL
40	(	?
41	)	@
58	:	↑
59	;	↓
60	<	←
61	=	→
62	>	—
63	?	T

CHAPTER 4

VMS Radar Speed Display

This section relates to programming the VMS board to display the speed data from the radar on the screen as a speed in KM/H.

There are 2 ways in which the VMS board can display the radar measured speed.

4. As part of a normal message.

5. As a radar speed triggered display.

With either method a user screen must be generated that contains the special characters that represent the Hundreds, Tens and Units of the measured speed.

When programming the screen new special characters appears when you cycle through the character options under the 4, 5 and 6 keys. The RH character is under the 4 key and will display the hundreds digit. The RT character is under the 5 key and will display the tens digit. And the RU character is under the 6 key and will display the units digit.

The normal configuration is to put these 3 digits one after the other into your screen display showing the speed in a display of your preference.

If the screen is part of a normal message then simply program the screen in the normal manner into a message and run that message, when the radar unit detects a vehicle, the detected speed will be shown.

To show the speed in a radar triggered display,(eg triggered at a predefined speed) program the screen as above and then press the MENU key and use the Right and Left cursor key to select the user screen number you programmed as the radar triggered screen. When a vehicle is detected travelling at above the dialled speed, your chosen screen will be shown with the measured speed shown in place of the special characters.

To show the vehicle speed as a part of a normal message us special characters above to create a normal message. When you select and run the message turn the radar on using the MENU key and set the trigger speed to the maximum value that you wish the speed to be displayed at.

To set radar trigger speed enter the code ‘@Rxxx’, to set radar triggered display enter the code ‘@Sxx’ and to set the radar’s top speed at above which the radar doesn’t trigger enter the code ‘@Txxx’.

Appendix A. SMS Graphics

@G00		@G13	
@G01		@G14	
@G02		@G15	
@G03		@G16	
@G04		@G17	
@G05		@G18	
@G06		@G19	
@G07		@G20	
@G08		@G21	
@G09		@G22	
@G10		@G23	
@G11		@G24	
@G12		@G25	

Appendix B. Preset Messages

P01	WRK ↑T		
P02	WRK T↑		
P03	WRK ↑TT		
P04	WRK TT↑		
P05	WRK ↑↑T		
P06	WRK T↑↑		
P07	WRK ↑TTT		
P08	WRK TTT↑		
P09	WRK ↑↑TT		
P00	WRK TT↑↑		
P11	WRK ↑↑↑T		
P12	WRK T↑↑↑		
P13	FLAGMAN		
P14	LEFT ARR		
P15	RGHT ARR		
P16	CTN RDWK		
P17	PREPSTOP		

Appendix B. Preset Messages (CONTINUED)

P18 EXPDELAY

P19 PTSEXDEL

P20 CHNGTRAH

P21 DTRAH RS

P22 TRAF HZD

P23 EXITCLSD

P24 ROADCLSD

P25 WRK ↑T↑

P26 WRK ↑TT↑

P27 WRK ↑T↑↑

P28 WRK ↑↑T↑

P29 RDWKRAMP

Appendix C. Preset Screens

P01 ROADWORK

P02 CAUTION

P03 RDWRKRMP

P04 CHNGTRAH

P05 REDUCSPD

P06 PREPSTOP

P07 EXPDELAY

P08 RD CLOSD

P09 DETOURAH

P10 TRAFHAZD

P11 NO WIDE

P12 EXITCLOS

P13 MN ON RD

P14 LINEMARK

P15 LSE SURF

P16 RADAROFF

Appendix D. Preset Graphics

G01

G02

G03

G04

G05

G06

G07

G08

G09

G10

G11

G12

G13

G14

G15

G16

G17

G18

G19

G20

G21

G22

G23

G24

G25

G26

Additional Graphics

G27

G28

G29

G30

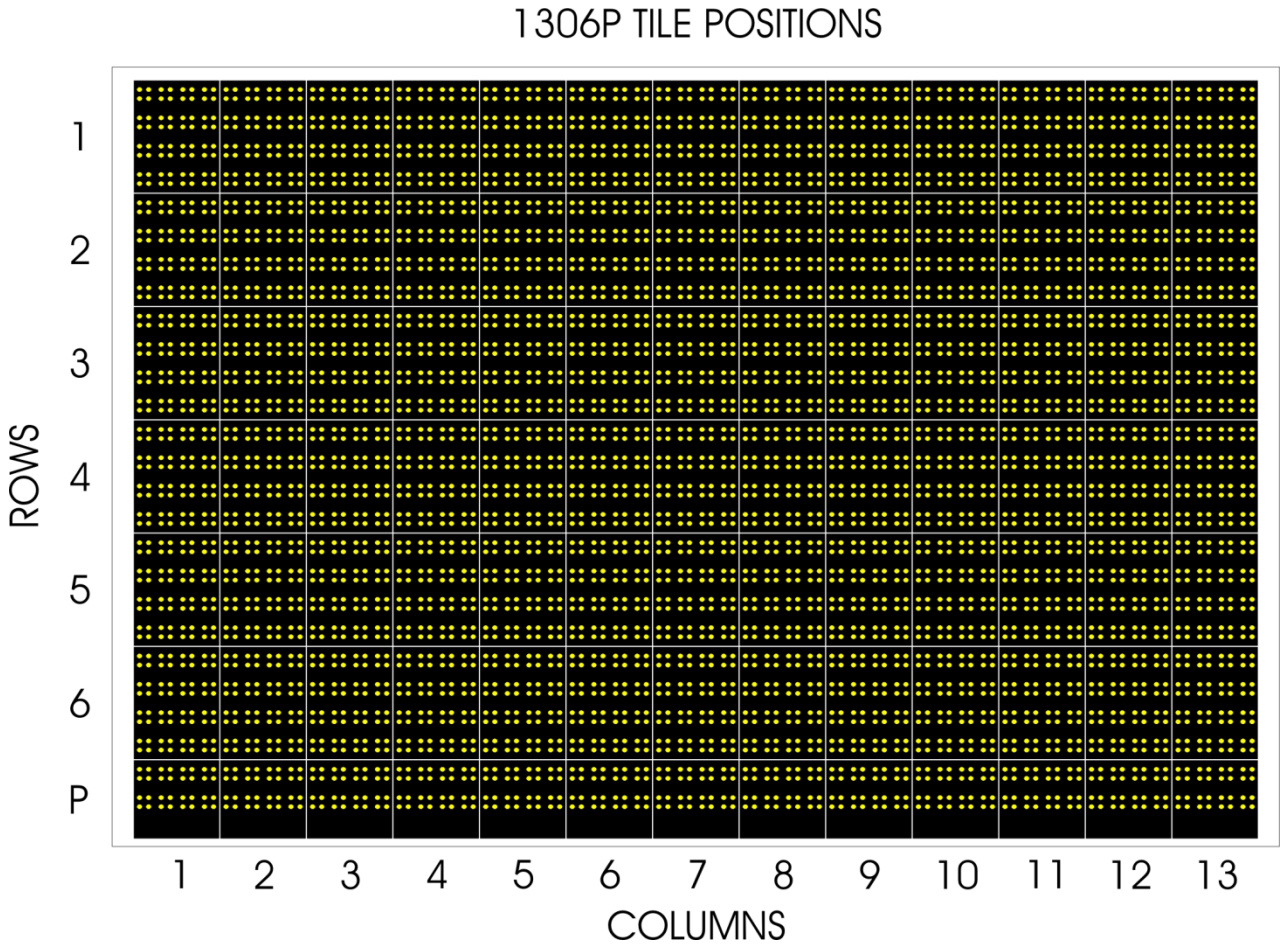
G31

Appendix E. Service Codes

All codes are entered after pressing MSG EDIT

Code	Function
1111	Edit Message
2222	Edit Screen
3333	Test Screen (4 ON 4 OFF Scrolling, 50% Bright)
4444	Test Screen (Show Row Numbers, 50% Bright)
5555	Test Screen (Horizontal Bars Move from top to bottom, 50% Bright)
7787	Hide Brightness Numbers
7788	Show Brightness Numbers
8888	Power Board Test (counts from 1 to 12, 13 or 15 while powering from 1 P module)
987x	Set To Fixed Brightness (x is the Brightness, 0=Max 9 = Min)
9880	Set To Auto Brightness Mode

Appendix F. Tile Positions



Front View