

FUNCTIONS

[vC2.64a to vC2.64i]



vC2.64a vC2.64i

Part Number 2A91263

CONTENTS

(Functions Section)

- 1. Introduction
- 2. How to Contact PEC
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- 4. Functions 01-108

1 INTRODUCTION

As the Functions are presented in this Manual in numerical order, page numbers are not required.

Each Function is presented in the same manner as follows:

• Function Number

When entered, the Function number appears on the Litres window.

• Function Description

A function description states what the function does. It could display information (e.g. last fatal error, probe temperature), enter commands (e.g. erase setup) or enable or disable set-ups (e.g. preset delivery).

• Function Range

If applicable, this refers to the acceptable inputs.

Defaults

Where a range is available, a default is usually one of the values from the range.

Considerations

Includes further instructions concerning the procedures.

2 HOW TO CONTACT PEC

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PO Box 308

DDI: +64 6 327 0327

+64 6 327 0060

Fax: +64 6 327 6724

Marton Email: pecsupport@pec.co.nz

4741

New Zealand Website: www.pec.co.nz

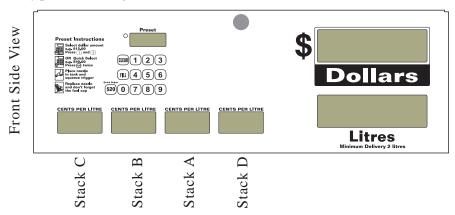


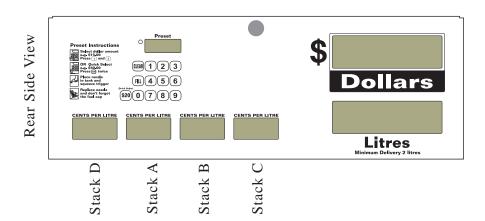
When contacting PEC always quote the serial number on the product's nameplate.

3 ASSUMPTIONS

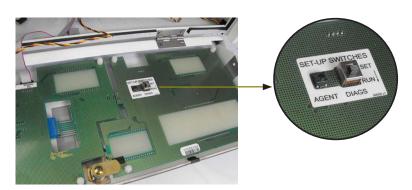
The following assumptions and conventions are in effect in the vC2.64i functions section:

(a) Unless stated otherwise, illustrations are of a 4 product head in the typical configuration, as shown below;





- (b) Unless stated otherwise, illustrations are shown from the Front Side View;
- (c) Functions are accessed by moving the Diagnostics switch to 'SET'. High level functions denoted by an asterisk (e.g. Fn **D**) are only accessible by also pressing the 'AGENT' button.



4 FUNCTION DETAILS

The following pages describe in detail the functions in numerical order.



DISPLAY THE LAST FATAL ERROR

DESCRIPTION

Displays the last reported fatal error code. A fatal error is one that will cause a pump to shut down, see the Error Codes section.

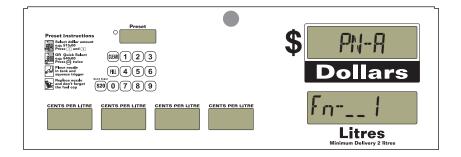
RANGE

N/A

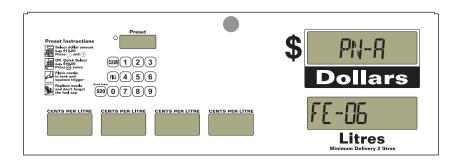
DEFAULT

N/A





FILL)



The error code displayed in the litres window could be any fatal error. See the Error Codes section for a full list of fatal error codes and their meanings.

The above example shows FE-Db, displayed when the current or last delivery variables have been lost, e.g. through loss of power to the FDS.

(Associated functions: Fn 10.)

DISPLAY ERROR LOG

DESCRIPTION

Displays all errors since the Processor PCB memory was last cleared.

Occurrences of each error code are recorded within the RAM on the Processor PCB. Function 2 displays the number of times each error has occurred.

The Litres display shows the error number and the Cents Per Litre display shows the number of times this error has occurred since memory was cleared. Pressing steps through each error number and will take the user to a maximum value of [1-9].

RANGE

00 to 99

DEFAULT

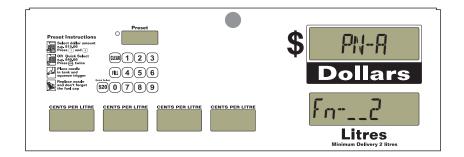
EL-00

CONSIDERATIONS

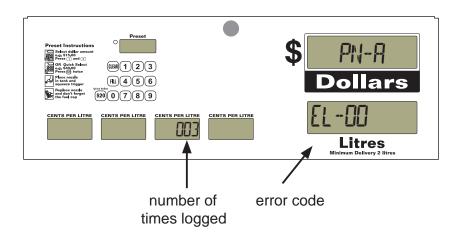
Since the error logs are stored on the Processor PCB, PEC recommends clearing the RAM (see $f \cap \square$) when replacing the Processor PCB to ensure that any carry-over logs in the replacement PCB's RAM are removed.



2



S (FILL)



Scroll through the logged error codes by pressing (to a maximum value of <math>[L-99]).

Error codes can be directly keyed in once at step 2 above, avoiding the time-consuming process of scrolling through sequential entries to reach the required error code. Key in the required error code as a 2-digit number (e.g. press 0, 7 to go directly to the log for error 7).



COMMUNICATION TEST

DESCRIPTION

Displays polls received on the comms loop from the forecourt controller. Shows polls for all pumps on the loop not just the pump the function is performed on.

This function gives an indication of the speed and efficiency of pump comms while running.

RANGE

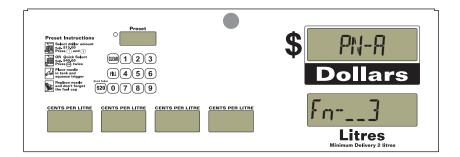
N/A

DEFAULT

N/A

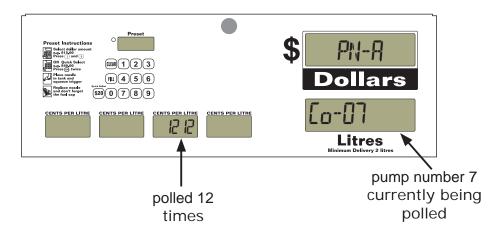






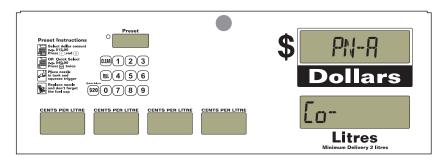






The above is a snapshot of the polling sequence. The display appear on both front and rear sides. The numbers will **not** be displayed in sequential order and the display sequence will repeat continuously until the Figure button is pressed. In the above example pump unit number 7 has been polled 12 times since the test was started.

The display shown below indicates that comms are inoperative, for example the pump is currently set to standalone mode.





TEMPORARY STANDALONE

DESCRIPTION

Permits Forecourt Controlled pumps to operate independently of the forecourt controller in the event of communications failure. The pump automatically resumes forecourt controlled operation when communications are restored. Therefore, Function 4 only works when FDS is isolated from Comms signal.

For permanent standalone, the pump comms number should be set to $\overline{U}\overline{U}$ (see Function 20/21, 40/41, 60/61 and 80/81).

RANGE

N/A

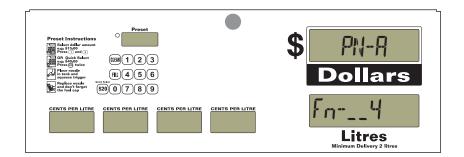
DEFAULT

N/A



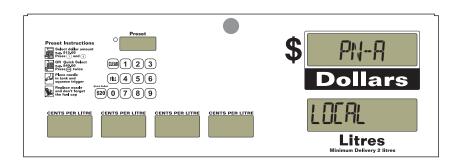






3





3



to confirm the command.



NOT IN USE

Auxiliary lighting functionality is designed into all software models but is not used. Hardware to switch lighting does not exist.



DOES NOT EXIST

Speaker tests apply to older versions only.



DISPLAY TEST

DESCRIPTION

Function 7 tests each segment of the LCD displays. The test is continuous, to stop, press (LEAR).

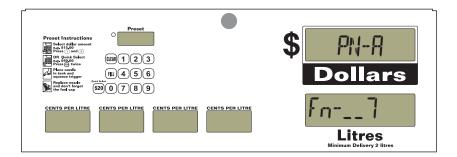
RANGE

N/A

DEFAULT

N/A



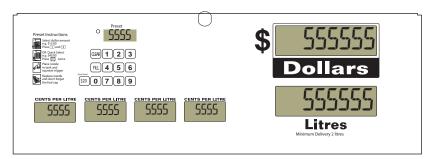


The segments are displayed on all of the windows (Preset, Dollars, Cents Per Litre and Litres) in the order illustrated below.



From the last segment display above, there will be a time lapse of approximately 20 seconds, at which time the display test is occuring on the other side of the FDS. Then a rapid succession of displays of 5s and 8s will occur.

Ultimately, the final display will be as shown below. Unless the the pressed, the process will go back to the segments display and the sequence will repeat indefinitely.





SOFTWARE VERSION

DESCRIPTION

Displays the version of code in the EPROM on the main Processor PCB. The first letter of the version number shown in the Litres window indicates which pump protocol is set via jumpers on processor PCB.

P = PEC

 $\mathbf{5} = \text{Gilbarco}$

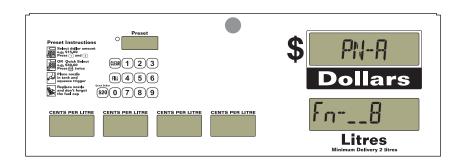
RANGE

N/A

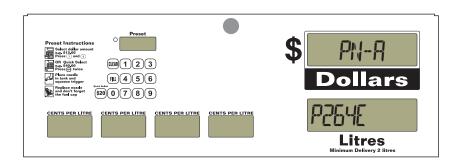
DEFAULT

N/A

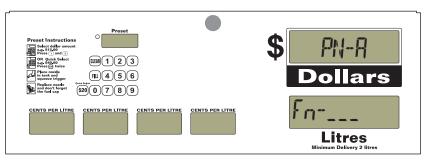
(8)



(FILL)



Pressing exits the function. Alternatively, the function display cancels after 30 seconds, the display then appearing as shown below.





NOT IN USE

Fn 9 is present but is not recommended as a way of viewing dip switch data. Refer to the 9000 Servicing Manual which illustrates how to view and change dip switch settings by using the keypad.

ERASE SETUP / ERASE ERROR LOG

DESCRIPTION

This function will erase all existing setup information and return system values to their default parameters.

As an additional feature it is also able to clear error logs without erasing the pump setup. This is useful when monitoring error logs in a pump.

RANGE

N/A

DEFAULT

N/A

CONSIDERATIONS

Re-installing Erased Set-up Information after Performing Function 10:

Performing Function 10 will erase settings. Ensure that, where settings may not be immediately apparent, their values are recorded BEFORE erasing them so that the correct values can be re-entered. These may include:

Pump Numbers (Function 20/21)

Float Switch/Ultra Switches (Function 14)

Start-up Delay (Function 16)

Setting Hoses Active (Function 22/23 42/43 62/63 82/83)

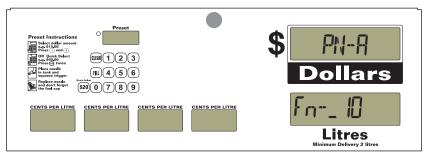
Vapour Recovery (Function 18)



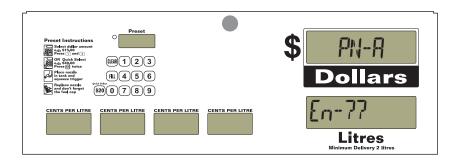
PROCEDURE (ERASE SETUP)

Function 10 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

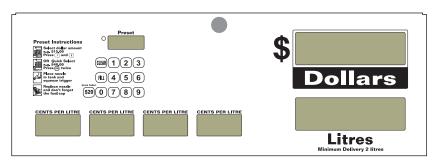




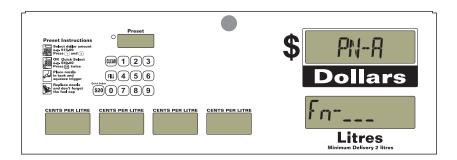
(FILL)



RAM is cleared, the pump resets and goes through the normal startup process. The Dollars and Litres windows are rendered blank: six beeps are given and the display automatically goes back to Function Mode, as shown below and next page.





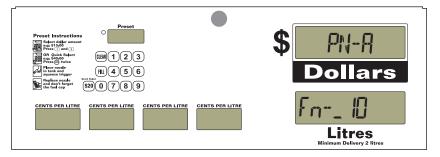


Reset the switch to "RUN", FUEL OFF will be displayed and the pump will need to be setup again.

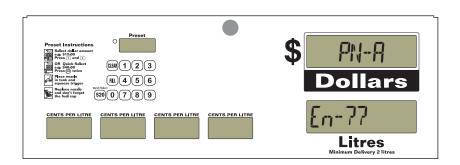


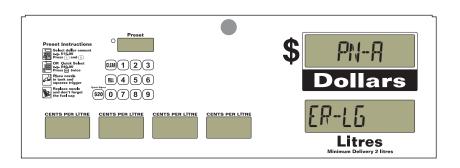
PROCEDURE (ERASE ERROR LOG)

Function 10 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.



FILL)



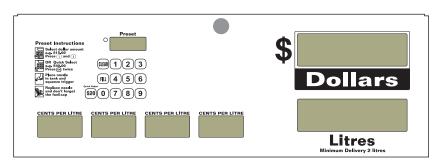


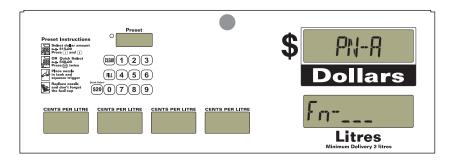




(FILL)

The Dollars and Litres windows are rendered blank: six beeps are given and the display automatically goes back to Function Mode but setup is not lost. The display sequence is shown below:





Reset the switch to "RUN".





NOT IN USE

This function is not applicable to software version 2.64g.



GRADE PRIORITY MAPPING

DESCRIPTION

Used when PEC pumps are connected to a Gilbarco console. Gilbarco consoles send grade/pricing data in a specific sequence, reflecting the order of grades in the console system. If the FDS grade order is not matched to the order that data is received from the console, the wrong grade/price information will be assigned.

A potential mismatch might occur if the Grade Priority is not mapped at the FDS, for example if the order of the data from the Gilbarco console is:

1 - 91 octane 2 - 95 octane 3 - 98 octane 4 - diesel

and the FDS hoses are physically arranged in the following order:

hose 1- 98 octane hose 2 - 91 octane hose 3 - diesel and hose 4 - 95 octane

If the default is left unaltered the pricing will be mismatched, hose 1 (98 octane) being assigned data for product 1 from the console (91 octane) and so on. Fn 12 enables the grade prices to be re-mapped to suit the data stream from the console.

In this case, the correct mapping for the FDS would be 3/1/4/2, i.e. hose 1 receives product 3, hose 2 receives product 1 and hose 3 receives product 4. The sequence of Grade Priority Mapping inputs would therefore need to be 3-1-4-2.

Note that the sequence entered must include the unused final digit. Fn 12 requires all 4 digits, even when the FDS delivers fewer that four grades. The 'unused' grades can be entered in any order, but there MUST be one of each 1,2,3 & 4 in the sequence.

RANGE

Any permutation of 1, 2, 3 and 4.

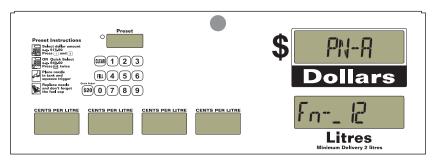
DEFAULT

Lb 1534

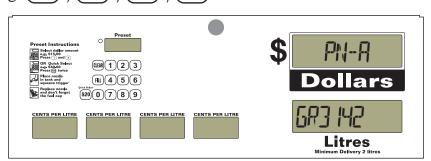


Function 12 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

1, **2**



followed by the Grade Priority Mapping input sequence, e.g. 3, 1, 4, 2



to confirm the entry.



PRESET OPTIONS - DOLLARS OR LITRES

DESCRIPTION

Sets the Preset to either the dollar value or litres value on pumps set to PEC Comms

On pumps set to Gilbarco Comms, and only on 1MPD configuration, Function 13 allows an option of either Enva or Electroline.

RANGE

PEC: VAL-Por VOL-P

Gilbarco: Enl'A or ELIn

DEFAULT

PEC: Dollar value preset (l'AL-P).

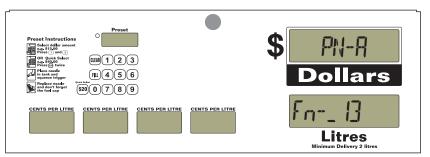
Gilbarco: EnliA



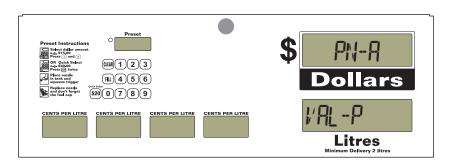
PROCEDURE (ON PEC CONFIGURATION)

Function 13 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

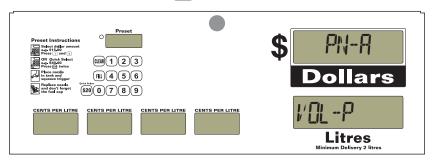




(FILL)



Press any numeric key (except (20)) to toggle the values from V = P to V = P.



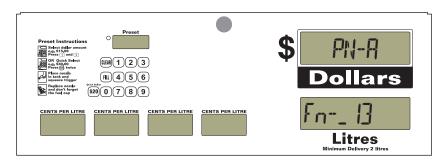


PROCEDURE (ON GILBARCO CONFIGURATION)

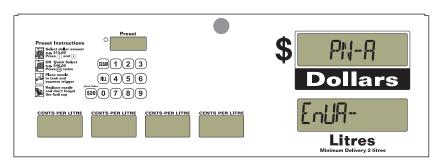
This procedure only applies to 1MPD configuration.

Function 13 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

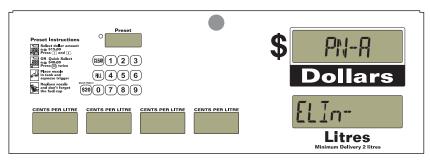




FILL



Press any numeric key (except (320)) to toggle the values from [n]/n to [L]n.





FLOAT SWITCH SETTING

DESCRIPTION

Includes two distinct operations:

- 1 defines the input method for the Float Switch, if fitted, and
- 2 assigns the air-sense inputs to the relevant grades/stacks, if used.

RANGE

Float Switch input method:

```
[] (not fitted/used);
```

(float switch cable connected to Air Sense 1 on the Logic PCB) or

? (float switch cable connected to the Processor PCB).

Air-sense input method:

```
[] (not fitted/used);
```

Grade 1;

Grade 2;

3 Grade 3:

DEFAULTS

FLT-D

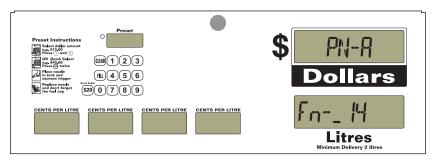
AIR I-O

AIRS-0

AIA3-0



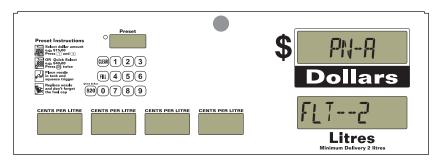




Note that the display may show 2 digits. If so, ignore the second digit.

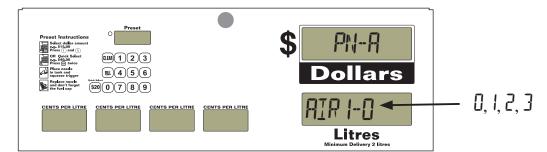


Activates the float switch.

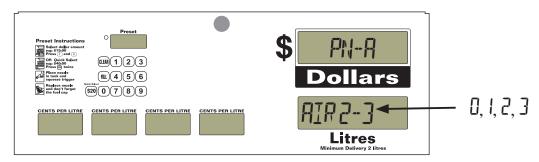




(F)



- sets the air sense to inactive \Box , which should always be the case for the 9000 series (with software version 2.64 vertical display) as they are not fitted with air sense components. If for some reason, an air sense device is fitted, enter the grade number to be assigned to it, e.g. (2) for grade 2
- Repeat the above steps as required for AIRI and AIRI, selecting I for no air sense or a grade number if air sense is fitted.





NOZZLE FINALISATON

DESCRIPTION

Determines whether the transaction total is sent to the console as soon as delivery is completed (e.g. preset limit reached or no fuel has flowed for 60 seconds) or if the nozzle must first be replaced into its holster before the total is sent.

The setting is applied to ALL delivery types (preset, prepay and postpay).

Normal Preset Finalisation - The FDS will send the sale information through to the console as soon as the delivery has been completed (i.e. as soon as the preset/prepay value has been reached or after no fuel has flowed for 60 seconds). The nozzle does not have to be replaced into its holster.

Wait for Nozzle Preset Finalisation - The FDS will not send the sale information through to the console until the nozzle has been replaced into its holster.

RANGE

F-nI (Wait for Nozzle Preset Finalisation) or

If -nL (Normal Preset Finalisation)

DEFAULT

IF-nI (Wait for Nozzle Preset Finalisation)

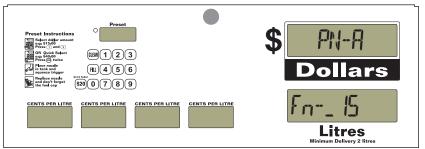
CONSIDERATIONS

If -n! should ALWAYS be used to reduce likelihood of drive-offs.

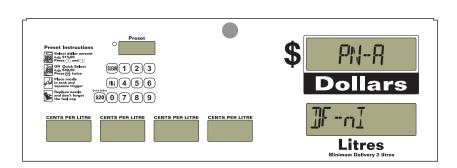


Function 15 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

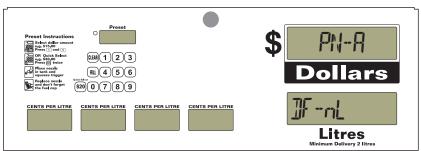




FILL)



any numeric key to toggle between IF-nI and IF-nL



fill to confirm the entry.



START UP DELAY

DESCRIPTION

Sets the delay before deliveries can start. It permits the leak detectors in the submersible pumps to function properly while the system is pressurising before the dispenser begins delivering. The number of seconds required for the leak detectors to work correctly will vary from site to site but is usually in the range of 3-6 seconds.

RANGE

00.5 to 25.5 seconds.

DEFAULT

00.5 sec

CONSIDERATIONS

This function is usually used on dispensers. It should be set as part of the installation of the dispenser.

The values must be entered in multiples of 00.5 seconds.

Values should be entered as three digit sequences with an implied decimal point, so 2, 5, represents the maximum of 25.5 seconds.

If a number greater than 25.5 seconds is entered, the value registered may not be correct.

The illustrations in the procedure show the value in the CENTS PER LITRE window that typically corresponds to grade 1. Some FDS configurations may use a different CENTS PER LITRE window, but in all cases only one CENTS PER LITRE window will show figures (except for totes).

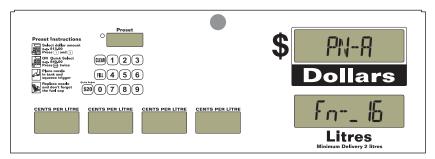
5

PROCEDURE

Software version 2.64g has been slightly modified from 2.64e and shows decimal points on the start up delivery for easier interpretation of the number of seconds display.

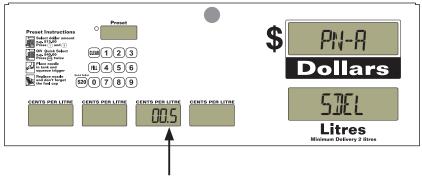
Function 16 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.





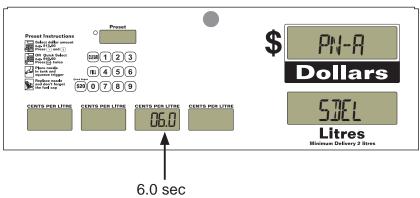
FILL)

3



Default (0.5 sec) Note the decimal point.

0, **6**, **0** (6 seconds used in this example.)





PRESET SHUTOFF TOLERANCE

DESCRIPTION

Used to change the Preset Shutoff Tolerance to overcome small delivery overruns of one or two cents on preset or prepay deliveries.

RANGE

10 to 30. Values of less than 10 or greater than 30 will default back to 20.

DEFAULT

20

CONSIDERATIONS

In the time between the preset shutoff valve being sent the instruction to close and when it actually closes, up to 20 ml of fuel passes through the valve. This may cause indication of a 1 or 2 cent overrun.

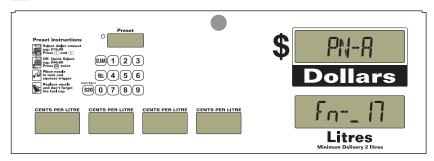
This can be prevented by increasing the shutoff tolerance, set by default at 20 ml. N.B. This will only resolve small overruns of one or two cents, larger overruns will have a different cause.

The illustrations in the procedure show the value in the CENTS PER LITRE window that typically corresponds to grade 1. Some FDS configurations may use a different CENTS PER LITRE window, but in all cases only one CENTS PER LITRE window will show figures (except for totes).

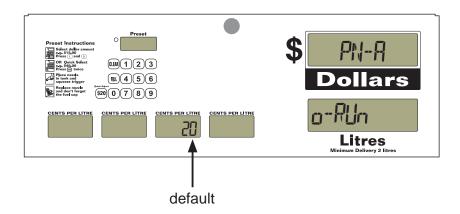


Function 17 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

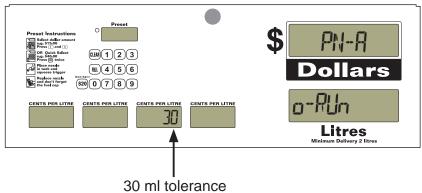




FILL)



3, 0 (30 ml used in this example.)



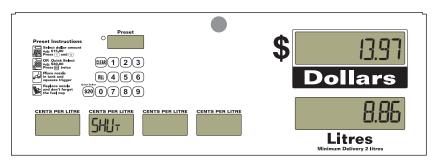


VAPOUR RECOVERY

DESCRIPTION

Enables the automatic shutdown of pumps from the vapour monitoring system. If the monitoring system detects a shutdown requirement (e.g. error condition that persists for a given number of days), the pump ceases to operate on the hose involved in vapour recovery. A SHUT OFF display scrolls on the CENTS PER LITRE window of the affected hose (figure below).

The front and rear side of the pump are enabled and disabled separately.



RANGE

vapour recovery disabled

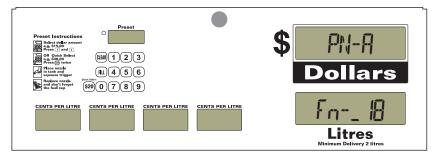
l vapour recovery enabled

DEFAULT

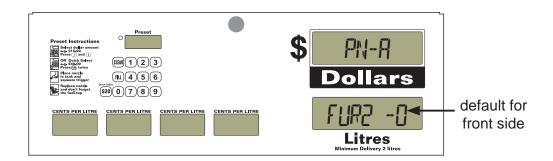


Function 18 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

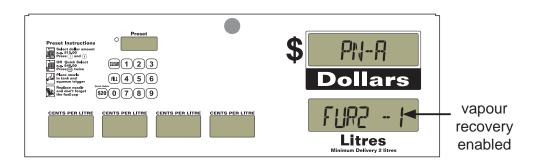
(F) (8)



FILL)

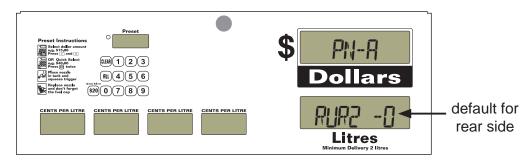


 \subseteq 1



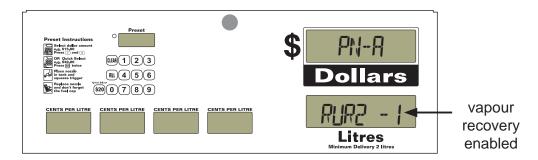


to confirm the entry. This will also display the rear default.





S







DOES NOT EXIST

SETTING THE PUMP NUMBER

DESCRIPTION

Sets the pump number(s) for forecourt controller to use when communicating with the FDS.

Each side of the FDS is allocated a pump number. The front is allocated a number using $F \cap 20$ while $F \cap 21$ sets the rear side's pump number.

Setting the pump numbers may be done from either side.

RANGE

11 to 32 when using PEC protocol;

[] to | b when using Gilbarco protocol;

(Standalone pumps are assigned III.)

DEFAULT

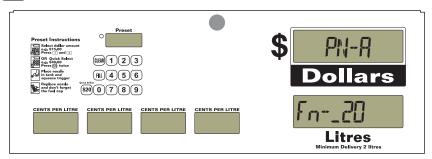
CONSIDERATIONS

If values greater than the permitted range are entered, the value is rejected and the display returns to the PA-00 display on the Litres window.

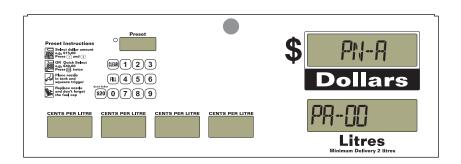
This function is applicable to pump numbers assigned by the Forecourt Controller. Pump numbers in this case are those allocated on the comms loop and may differ from the number written on the pump.



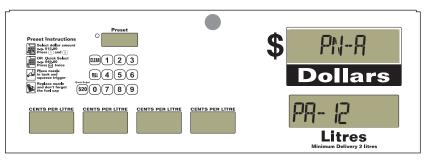
2, **0**



FILL)



(pump number 12 used in this example.)



SETTING THE PUMP NUMBER

DESCRIPTION

Sets the pump number(s) for forecourt controller to use when communicating with the FDS.

Each side of the FDS is allocated a pump number. The front is allocated a number using $F \cap 20$ while $F \cap 21$ sets the rear side's pump number.

Setting the pump numbers may be done from either side.

RANGE

11 to 32 when using PEC protocol;

[] to | when using Gilbarco protocol;

(Standalone pumps are assigned III.)

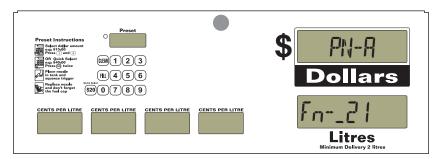
DEFAULT

CONSIDERATIONS

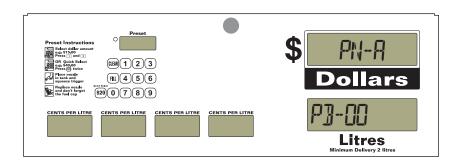
If values greater than the permitted range are entered, the value is rejected and the display returns to the state shown in the procedure after the first [FILL].

This function is applicable to pump numbers assigned by the Forecourt Controller. Pump numbers in this case are those allocated on the comms loop and may differ from the number written on the pump.

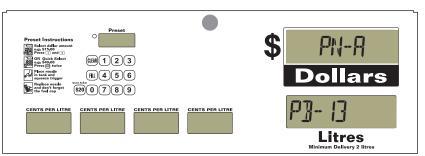
2, **1**



FILL)



(pump number 13 used in this example.)





SETTING THE HOSES ACTIVE HOSE A1

DESCRIPTION

Set hose A1 as active.

RANGE

[] (inactive) or | (active).

DEFAULT

[].

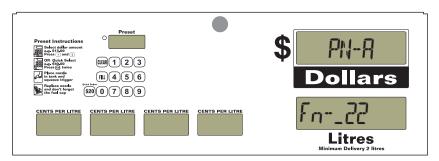
CONSIDERATIONS

The table below details the relationship between the related function numbers and the position of the hoses they activate:

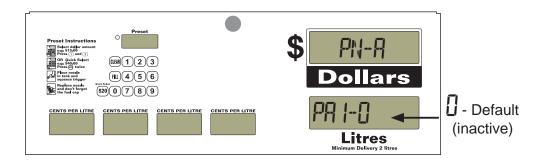
Fn	DEFAULT LITRES DISPLAY	HOSE POSITION
22	PA 1-0	1 Front
23	P] -0	1 Rear
42	PA2-0	2 Front
43	P32-0	2 Rear
62	PA3-0	3 Front
63	P33-0	3 Rear
82	PA4-0	4 Front
83	P] 4-()	4 Rear



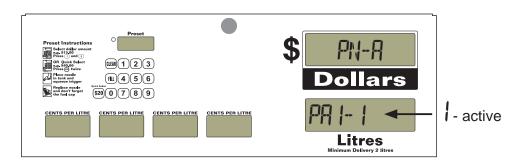




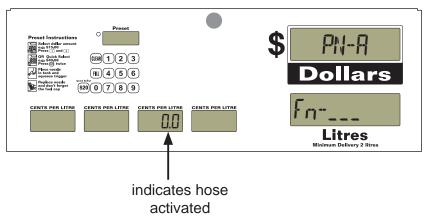
FILL)



 \subseteq 1



to confirm the entry and return to functions mode.





SETTING THE HOSES ACTIVE HOSE B1

DESCRIPTION

Set hose B1 as active.

RANGE

[] (inactive) or | (active).

DEFAULT

Ω.

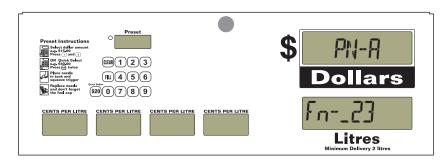
CONSIDERATIONS

The table below details the relationship between the related function numbers and the position of the hoses they activate:

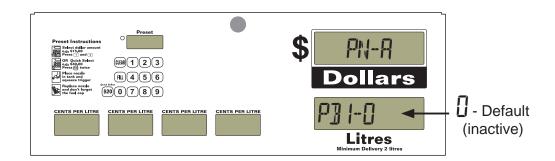
Fn	DEFAULT LITRES DISPLAY	HOSE POSITION
22	PA 1-0	1 Front
23	P] -0	1 Rear
42	PA2-0	2 Front
43	P32-0	2 Rear
62	PA3-0	3 Front
63	P]]3-0	3 Rear
82	PA4-0	4 Front
83	P] 4-()	4 Rear

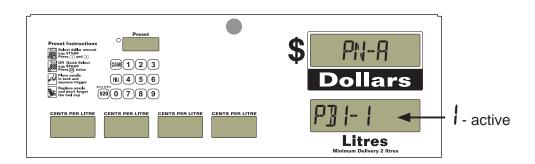


(2), (3)

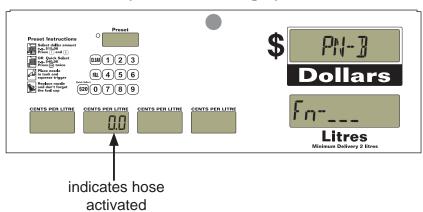


FILL)





to confirm the entry. Results as displayed on rear side.





TEST DELIVERY SIDE A (FRONT) [HOSE 1]

DESCRIPTION

Permits a test delivery on the front side of the FDS which is not sent to the POS. Although this and associated functions are detailed as hose-specific (e.g. $F \cap Z^{U} = \text{hose A1}$) they are applicable to any hose on that side which is set as active.

RANGE

N/A

DEFAULT

N/A

CONSIDERATIONS

Applicable to Forecourt Controlled FDS's only.

Totes are incremented during the delivery.

The front and rear displays behave differently during these functions depending on which side's display is being used to enter the function and which side the delivering hose is on.



Dollars and Litres show

PROCEDURE

3 Function 24 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.





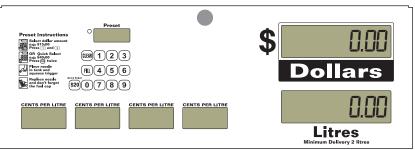
grade prices will display in active **CENTS PER LITRE windows**





grade prices will display in active **CENTS PER LITRE windows**



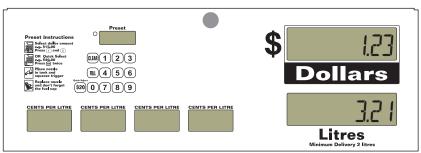


either the last sale details or zeros

grade prices will display in active **CENTS PER LITRE windows**



Deliver fuel from a front hose.



delivery details will be shown in the Dollars and Litres windows during and after delivery

grade price will display in dispensing CENTS PER LITRE window

Either perform further test deliveries or turn the power off and turn it on again to get back into function mode.





TEST DELIVERY SIDE B (REAR) [HOSE 1]

DESCRIPTION

Permits a test delivery on rear side of the FDS which is not sent to the POS. Although this and associated functions are detailed as hose-specific (e.g. Fn 25 = hose B1) they are applicable to any hose on that side which is set as active.

RANGE

N/A

DEFAULT

N/A

CONSIDERATIONS

Applicable to Forecourt Controlled FDS's only.

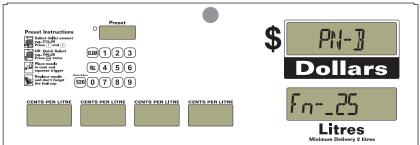
Totes are incremented during the delivery.

The front and rear displays behave differently during these functions depending on which side's display is being used to enter the function and which side the delivering hose is on.



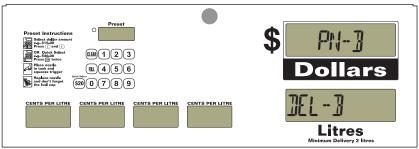
Function 25 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.





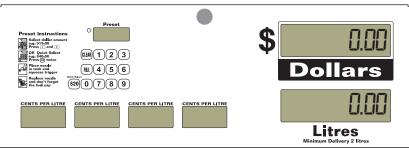
grade prices will display in active CENTS PER LITRE windows





grade prices will display in active CENTS PER LITRE windows





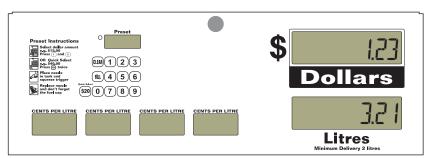
Litres show either the last sale details or zeros

Dollars and

grade prices will display in active CENTS PER LITRE windows



Set the diagnostic switch to "RUN" and then deliver fuel from a rear hose.



delivery details will be shown in the Dollars and Litres windows during and after delivery

grade price will display in dispensing CENTS PER LITRE window

Either perform further test deliveries or turn the power off and turn it on again to get back into function mode.





READING ELECTRONIC TOTES

DESCRIPTION

Displays the total value and volume delivered from hose A1 since the last RAM Clear ($Fn \parallel 1$).

Associated functions read the electronic tote data for other hoses, as explained in the following table:

Fn	HOSE ID CODE	HOSE POSITION
26	A I	1 Front
27	31	1 Rear
46	A5	2 Front
47	32	2 Rear
55	Я3	3 Front
67	33	3 Rear
86	R4	4 Front
87	34	4 Rear

RANGE

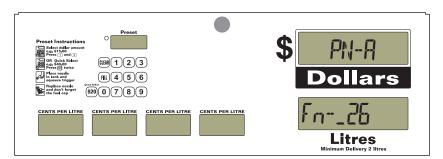
N/A

DEFAULT

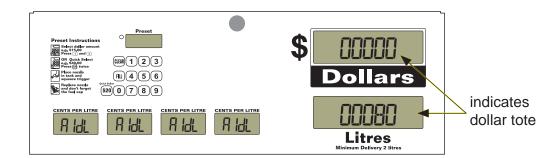
N/A



(2), (6)

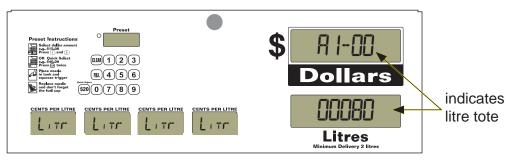


FILL)



FILL)

5



to exit and return to functions mode. Alternatively, the display will show the dollar value for approximately 20 seconds followed by the litre value for approximately 10 seconds before returning to functions mode.



READING ELECTRONIC TOTES

DESCRIPTION

Displays the total value and volume delivered from hose B1 since the last RAM Clear ($Fn \parallel 1$).

Associated functions read the electronic tote data for other hoses, as explained in the following table:

Fn	HOSE ID CODE	HOSE POSITION		
26	A I	1 Front		
27	31	1 Rear		
46	A5	2 Front		
47	32	2 Rear		
55	Я3	3 Front		
67	33	3 Rear		
86	A4	4 Front		
87]4	4 Rear		

RANGE

N/A

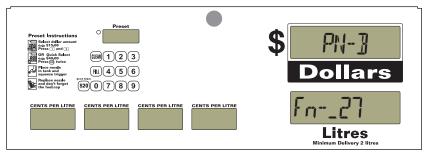
DEFAULT

N/A

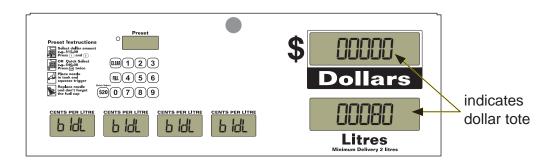


(NOTE THAT THESE ILLUSTRATIONS SHOW THE PROCEDURE AS CARRIED OUT ON THE REAR OF THE FDS)

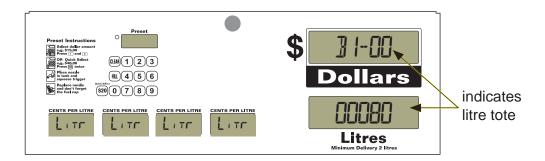




FILL)



FILL



to exit and return to functions mode. Alternatively, the display will show the dollar value for approximately 20 seconds followed by the litre value for approximately 10 seconds before returning to functions mode.





(Associated functions: Fn49 Fn69 Fn89.)

SETTING ALLOCATION LIMITS STACK A

DESCRIPTION

Sets the maximum whole-dollar value for transactions for stack A.

RANGE

5-digit mode: 000 to 990;

6-digit mode: 0000 to 9990.

DEFAULT

5-digit mode: OOO;

6-digit mode: 0000.

CONSIDERATIONS

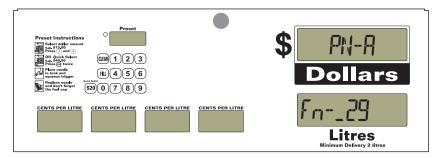
Entering allocation limits of zero results in no limit being set for stack A.

In Forecourt Controller mode, allocation limits are usually set remotely from the forecourt controller. If an allocation limit is set at the pump and a new limit is sent from the controller, the lesser of the two amounts becomes the valid limit.

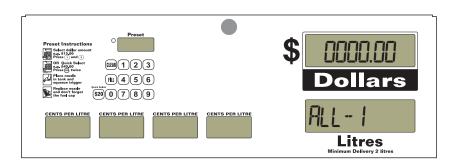
Allocation limits may be set for dollars value but **not** for litres value.



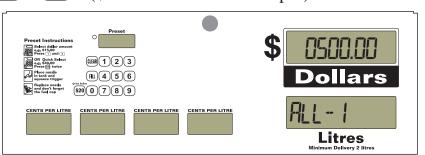
2,9



(FILL)



5, 0, 0 (\$500 used in this example)



to confirm the entry.

(Associated functions: Fn50 Fn70 Fn90.)

PUMP STACK TEST STACK A

DESCRIPTION

Allows testing of and provides data relating to a variety of stack functions. Whilst within the function, various operations can be carried out on the valves and motors of the stack. See CONSIDERATIONS for a comprehensive explanation of these operations.

RANGE

N/A.

DEFAULT

N/A.

CONSIDERATIONS

A stack test will check that fuel is flowing correctly and should also be used to flush the pipes and hoses and prime the system during installation.



When the holster panel is connected, if the nozzle switch cable is plugged into the Logic PCB and any nozzles are NOT in their holsters (i.e. if any of the holster switches are open), the motor of that module will start running.

Switches on the Logic PCB are left in the off (closed) position when shipped. (OFF = towards the centre of the PCB)

If using the test on an LPG hose, affix the LPG nozzle(s) to an approved container for collection of pumped fluid/gas, or to the vapour return nozzle test port (acme thread) to return fluid to storage. Refer to the MULTIPEC2 9000 Parts Manual for the location and description of the vapour return nozzle test port.

The CENTS PER LITRE readout shows two pairs of digits, separated by 2 (or 3) dots. The first (left) pair relates to the front hose, while the second (right) pair relates to the rear hose.

Flow Rate

The first digit of each pair shows the flow rate of the hose. A figure of between 2 and 5 is normal, indicating approximately 20 to 50 litres per minute.



Encoder Errors

The second digit of each pair indicates whether the encoder is generating errors when fluid is flowing. This digit can display any figure, but must remain constant. A changing figure shows that errors are being detected.

Nozzle Switch Indicator

In the middle of each pair of digits, a point indicates the status of the hose's nozzle switch. If a point is present, the nozzle switch circuit is open, i.e. the nozzle is in the lifted state. Absence of a point in the display indicates that the nozzle is in the down (holstered) state, or closed-circuit.

Float Switch Indicator

If a sump float switch is fitted and activated, the lowest centre point indicates its status. If a point is displayed, the switch is open (i.e. it is raised, indicating fluid in the sump) or the circuit jumper is disconnected. Absence of a point indicates that the sump float switch is in the down or closed circuit state (not activated).

Air Sense Indicator (Not LPG modules)

Older diesel modules may incorporate air sense circuitry. The indicator for this is the bottom point in the middle of the four digits in the CENTS PER LITRE window (see figures in the procedure section). When air is sensed in the module, the vacuum switch is activated and the circuit is opened, flow is automatically reduced to allow the air/vapour to be eliminated. Note that, for pump or dispenser modules, if the air sense jumpers (at J1, J2, J3 on the Logic PCB) have been accidentally disconnected, the module will only deliver fuel at the slow rate as the open circuit indicates that air/vapour is present.

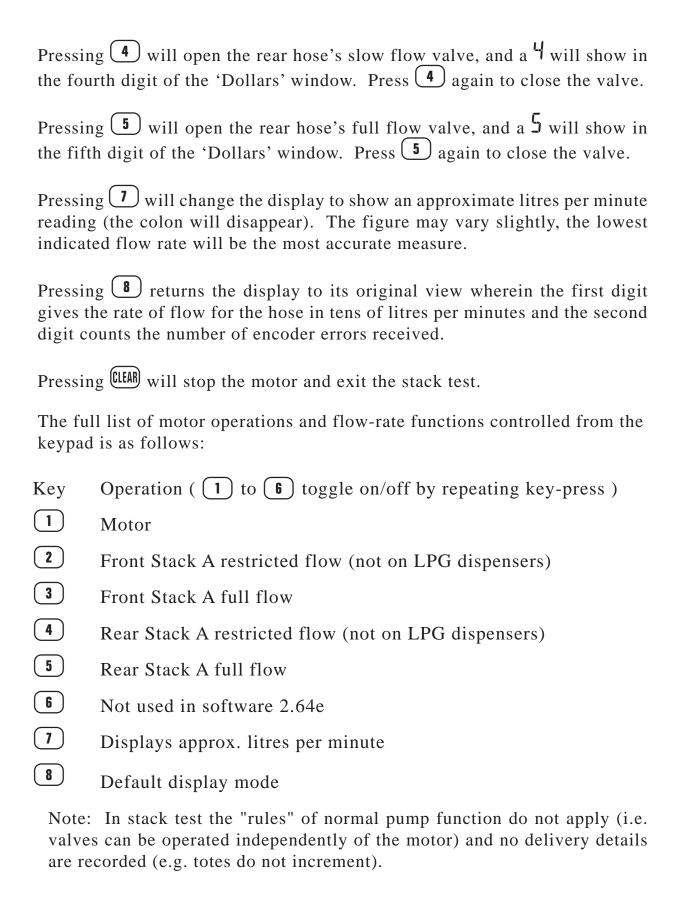
During these operations the 'Dollars' window will display information regarding the hoses in use and the motor status.

		on the motor,	,		in the fi	irst digit of
the 'Dollars'	window.	Press 1 aga	in to turn it	t off.		

Pressing will open the front hose's slow flow valve, and a distriction will show in the second digit of the 'Dollars' window. Press again to close the valve.

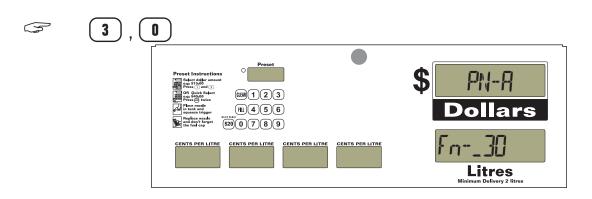
Pressing 3 will open the front hose's full flow valve, and a 3 will show in the third digit of the 'Dollars' window. Press 3 again to close the valve.



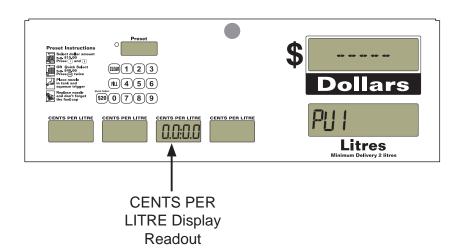




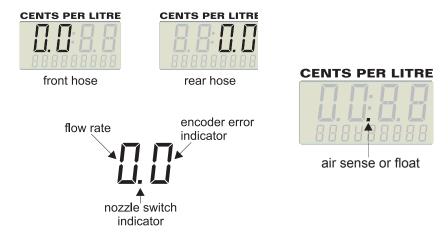
Function 30 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.



(FILL)



The CENTS PER LITRE readout shows two pairs of digit, separated by two (or three) dots. The first left pair relates to the front hose, while the second (right) pair relates to the rear hose.





5

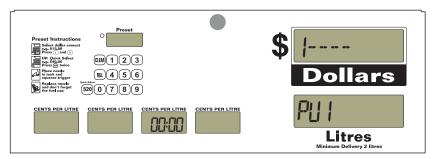
5

5

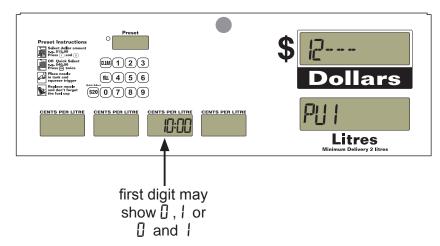
From this point in the stack test, operations can be performed in any order required by the tester. The following illustrations are examples of what the displays would show during these operations.

Motor operation and flow rates are controlled from the keypad.

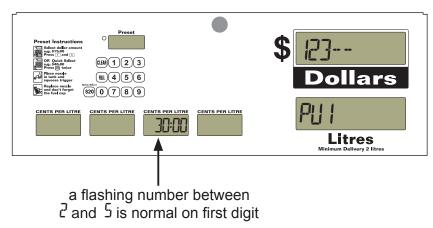
1 to turn on the motor. Pressing the key again toggles on/off.



to open the front restricted flow valve. Pressing the key again toggles on/off.

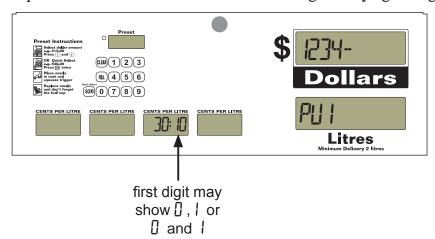


3 to open the front full flow valve. Pressing the key again toggles on/off.

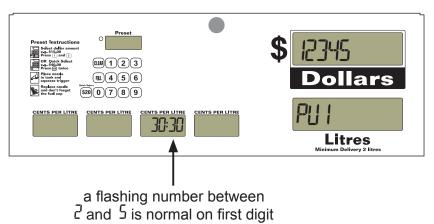




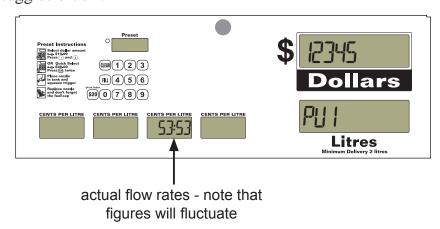
to open the rear restricted flow valve. Pressing the key again toggles on/off.



to open the rear full flow valve. Pressing the key again toggles on/off.



to show actual flow rates for front and rear. Pressing the key again toggles on/off.



CLEAR to exit the stack test.

3

3



SETTING PUMP PRICES STACK A

DESCRIPTION

Sets grade prices at the pump.

RANGE

0000 to 9999

The function requires four digits from 0000 to 9999 to be entered. Although this is the range, the FDS will not operate with a zero price. Therefore the acceptable input is from 000. I (cents per litre) to 999.9 (cents per litre).

DEFAULT

0000

CONSIDERATIONS

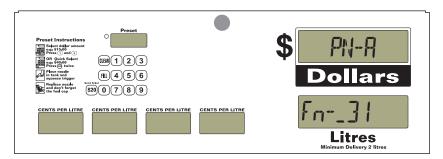
Applicable to FDS's in Standalone Mode only.

The hoses need to be activated before the prices can be set. Refer to Function 22.

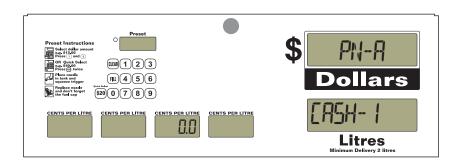
The price change takes one minute to complete from step 4 (confirming the entry) when the diagnostics switch is set to "RUN". No deliveries can be made during this time.

Always key in the new price as a full 4 digit sequence, e.g. to set to 98.9 cents per litre, enter (1), (1), (1), (1).

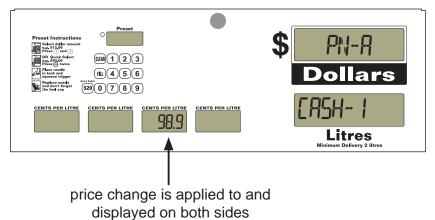
3,1



FILL)



0, **9**, **8**, **9** (98.9 cents used in this example)



to confirm the entry.



NOT IN USE

Historically assigned to Setting Pump Prices for credit transactions. Pump prices are now only available for cash mode of payment.

(Associated functions: Fn53 Fn73 Fn93.)

PRESET DELIVERY ALLOWED

DESCRIPTION

Sets whether or not preset deliveries are allowed on the FDS.

RANGE

```
(inactive) or (active).
```

DEFAULT

1

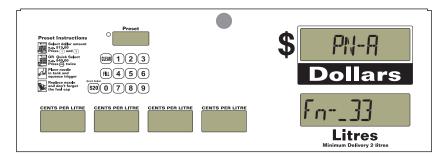
CONSIDERATIONS

These associated functions may initially appear to be only grade-specific due to their numbering. However, they ALL act on the whole FDS. Furthermore, there is no hierarchy within these functions, that is to say that they are ALL over-ridden by setting ANY of these associated functions. For example, if an FDS has been set to allow presets using fn 33 (setting to 1) it will be automatically set to 1 if any of fn 53/fn 73/fn 93 have been set to 1. This can be confirmed by once again entering fn 33, which will now show as being set to 1.

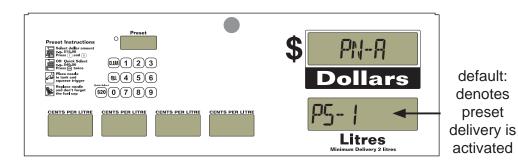
If the function is set to I, and the pump is switched to 'RUN' mode, the Preset window displays I. σ . If the function is set to I, and the pump is switched to 'RUN' mode, the Preset window is blank.

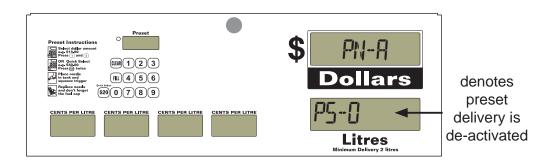






FILL





to confirm the entry.

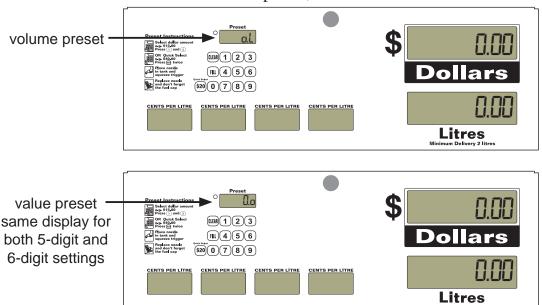


5

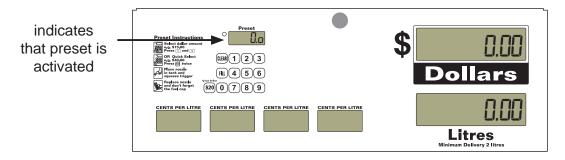
5

Presetting values (PEC protocol only):

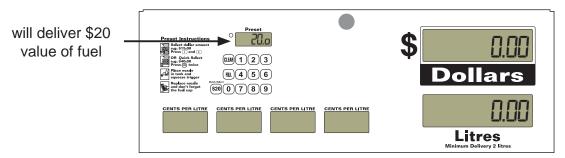
An improvement over vC2.64e is the ability to easily determine whether the pump has been set to either volume or value preset delivery (Function 13). If volume preset, the Preset window shows \Box . while if it is value preset, the Preset window shows \Box .



in order to preset the fuel delivery to a dollar value, as in this example, ensure preset delivery is activated, exit the function mode by shifting the diagnostic switch from "SET" to "RUN"



enter the preset amount from the acceptable range (1 to 999). For example, to preset the pump to deliver \$20, press (2). (0)











NOT IN USE

(Associated functions: Fn 38 Fn 104 Fn 107.)

VIEW UNCOMPENSATED DELIVERY VALUE (FDS FRONT)

DESCRIPTION

Displays the uncompensated delivery value taken at the front of the FDS.

RANGE

N/A

DEFAULT

N/A

CONSIDERATIONS

Applicable to LPG dispensing FDS's only.

9000 series FDS's only have LPG stacks in position A.

When used in conjunction with $\lceil n \rceil \square \rceil$ this function allows the accuracy of the correction factor displayed by $\lceil n \rceil \square \rceil$ to be checked.

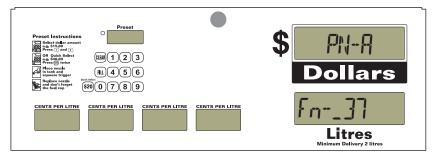
For example, if an LPG delivery was made for 15 litres and the uncompensated delivery value was displayed as 13.05 and the correction factor displayed in Fn 114 was 1.1495. Multiplying these factors would result in a figure that should be the same as displayed litres delivered:

 $13.05 \ x \ 1.1495 = 15.00$

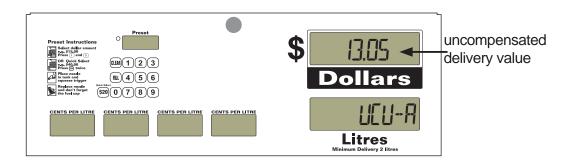


(DISPENSE LPG INTO AN APPROPRIATE CONTAINER FIRST, HANG UP THE NOZZLE, THEN ENTER FUNCTION MODE BEFORE FOLLOWING THIS PROCEDURE)





FILL





(Associated functions: Fn 37 Fn 104 Fn 107.)

VIEW UNCOMPENSATED DELIVERY VALUE (FDS REAR)

DESCRIPTION

Displays the uncompensated delivery value taken at the rear of the FDS.

RANGE

N/A

DEFAULT

N/A

CONSIDERATIONS

Applicable to LPG dispensing FDS's only.

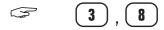
When used in conjunction with $\lceil n \rceil \square \rceil$ this function allows the accuracy of the correction factor displayed by $\lceil n \rceil \square \rceil$ to be checked.

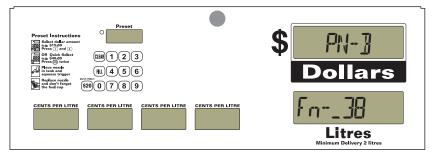
For example, if an LPG delivery was made for 15 litres and the uncompensated delivery value was displayed as 13.05 and the correction factor displayed in Fn 114 was 1.1495. Multiplying these factors would result in a figure that should be the same as displayed litres delivered:

 $13.05 \times 1.1495 = 15.00$

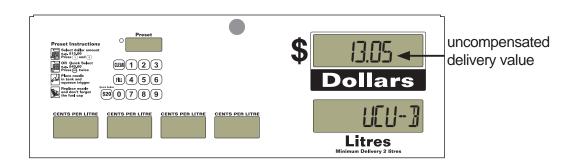


(DISPENSE LPG INTO AN APPROPRIATE CONTAINER FIRST, HANG UP THE NOZZLE, THEN ENTER FUNCTION MODE BEFORE FOLLOWING THIS PROCEDURE)





FILL)



CLEAR













SETTING THE HOSES ACTIVE HOSE A2

DESCRIPTION

Set hose A2 as active.

RANGE

[] (inactive) or | (active).

DEFAULT

[].

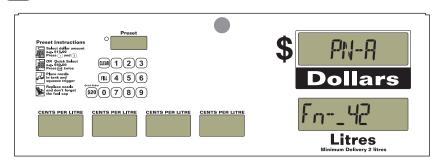
CONSIDERATIONS

The table below details the relationship between the related function numbers and the position of the hoses they activate:

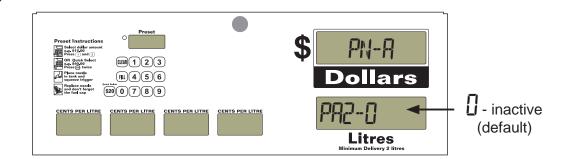
Fn	DEFAULT LITRES DISPLAY	HOSE POSITION
22	PA 1-0	1 Front
23	P] -0	1 Rear
42	PA2-0	2 Front
43	P32-0	2 Rear
62	PA3-0	3 Front
63	P]]3-0	3 Rear
82	PA4-0	4 Front
83	P] 4-()	4 Rear



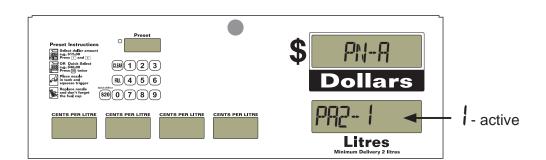




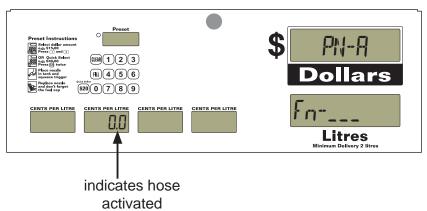
FILL)



 \subseteq 1



to confirm the entry and return to functions mode.





SETTING THE HOSES ACTIVE HOSE B2

DESCRIPTION

Set hose B2 as active.

RANGE

[] (inactive) or | (active).

DEFAULT

[].

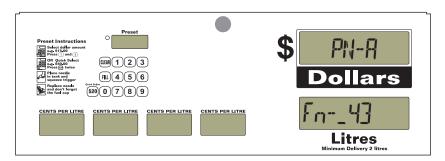
CONSIDERATIONS

The table below details the relationship between the related function numbers and the position of the hoses they activate:

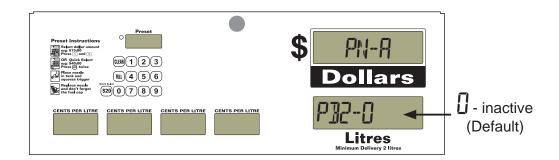
Fn	DEFAULT LITRES DISPLAY	HOSE POSITION
22	PA 1-0	1 Front
23	P] -0	1 Rear
42	PA2-0	2 Front
43	P32-0	2 Rear
62	PA3-0	3 Front
63	P]]3-0	3 Rear
82	PA4-0	4 Front
83	P] 4-()	4 Rear



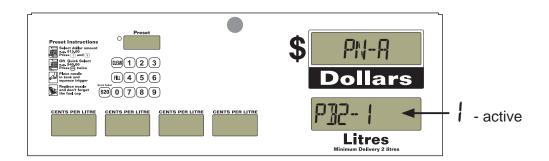
4, **3**



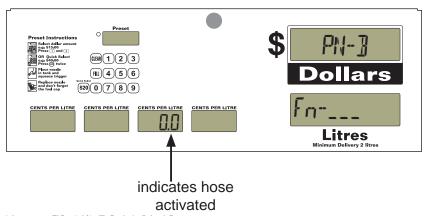
FILL)



 \subseteq 1



to confirm the entry. Results as displayed on rear side





TEST DELIVERY SIDE A (FRONT) [HOSE 2]

DESCRIPTION

Permits a test delivery on front side of the FDS which is not sent to the POS. Although this and associated functions are detailed as hose-specific (e.g. $\operatorname{Fn} HH = \operatorname{hose} A2$) they are applicable to any hose on that side which is set as active.

RANGE

N/A

DEFAULT

N/A

CONSIDERATIONS

Applicable to Forecourt Controlled FDS's only.

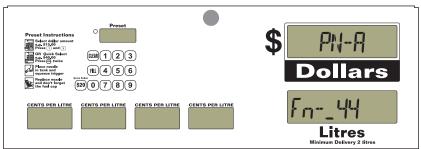
Totes are incremented during the delivery.

The front and rear displays behave differently during these functions depending on which side's display is being used to enter the function and which side the delivering hose is on.



Function 44 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.





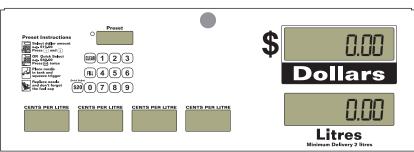
grade prices will display in active CENTS PER LITRE windows





grade prices will display in active CENTS PER LITRE windows



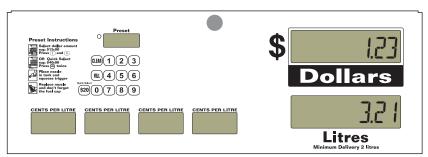


Dollars and Litres show either the last sale details or zeros

grade prices will display in active CENTS PER LITRE windows



Set the diagnostic switch to "RUN" and then deliver fuel from a front hose.



delivery details will be shown in the Dollars and Litres windows during and after delivery

grade price will display in dispensing CENTS PER LITRE window

Either perform further test deliveries or turn the power off and turn it on again to get back into function mode.



TEST DELIVERY SIDE B (REAR) [HOSE 2]

DESCRIPTION

Permits a test delivery on rear side of the FDS which is not sent to the POS. Although this and associated functions are detailed as hose-specific (e.g. $Fn \ 45 = hose \ B2$) they are applicable to any hose on that side which is set as active.

RANGE

N/A

DEFAULT

N/A

CONSIDERATIONS

Applicable to Forecourt Controlled FDS's only.

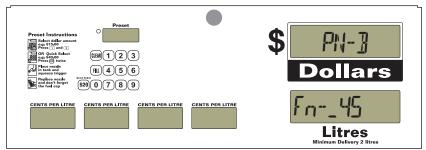
Totes are incremented during the delivery.

The front and rear displays behave differently during these functions depending on which side's display is being used to enter the function and which side the delivering hose is on.



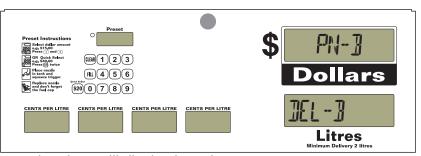
Function 45 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.





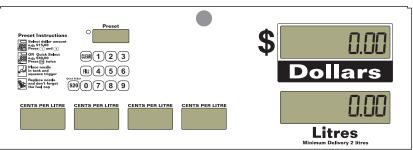
grade prices will display in active CENTS PER LITRE windows





grade prices will display in active CENTS PER LITRE windows



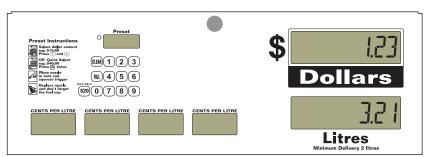


grade prices will display in active CENTS PER LITRE windows

Dollars and Litres show either the last sale details or zeros



Set the diagnostic switch to "RUN" and then deliver fuel from a front hose.



delivery details will be shown in the Dollars and Litres windows during and after delivery

grade price will display in dispensing CENTS PER LITRE window

Either perform further test deliveries or turn the power off and turn it on again to get back into function mode.





READING ELECTRONIC TOTES HOSE A2

DESCRIPTION

Displays the total value and volume delivered from hose A2 since the last RAM Clear ($Fn \parallel 1$).

Associated functions read the electronic tote data for other hoses, as explained in the following table:

Fn	HOSE ID CODE	HOSE POSITION
26	A I	1 Front
27	31	1 Rear
46	A5	2 Front
47	32	2 Rear
66	Я3	3 Front
67	33	3 Rear
86	A4	4 Front
87	34	4 Rear

RANGE

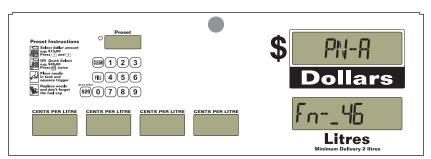
N/A

DEFAULT

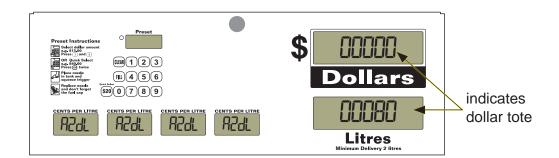
N/A



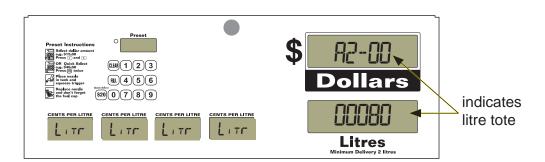




(FILL)



FILL)



to exit and return to functions mode. Alternatively, the display will show the dollar value for approximately 20 seconds followed by the litre value for approximately 10 seconds before returning to functions mode.



READING ELECTRONIC TOTES HOSE B2

DESCRIPTION

Displays the total value and volume delivered from hose B2 since the last RAM Clear ($Fn \parallel 1$).

Associated functions read the electronic tote data for other hoses, as explained in the following table:

Fn	HOSE ID CODE	HOSE POSITION
26	A I	1 Front
27	31	1 Rear
46	A5	2 Front
47	32	2 Rear
66	Я3	3 Front
67	33	3 Rear
86	A4	4 Front
87	34	4 Rear

RANGE

N/A

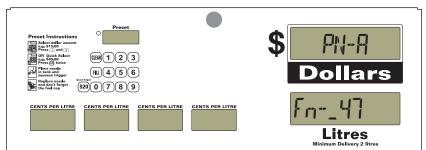
DEFAULT

N/A

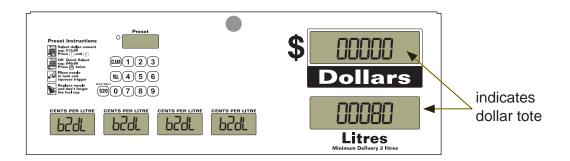


(NOTE THAT THESE ILLUSTRATIONS SHOW THE PROCEDURE AS CARRIED OUT ON THE REAR OF THE FDS)

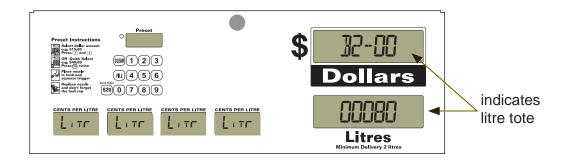




FILL)



FILL)



to exit and return to functions mode. Alternatively, the display will show the dollar value for approximately 20 seconds followed by the litre value for approximately 10 seconds before returning to functions mode.



DOES NOT EXIST



(Associated functions: Fn29 Fn69 Fn89.)

SETTING ALLOCATION LIMITS STACK B

DESCRIPTION

Sets the maximum whole-dollar value for transactions for stack B.

RANGE

5-digit mode: 000 to 990;

6-digit mode: 0000 to 9990.

DEFAULT

5-digit mode: OOO;

6-digit mode: 0000.

CONSIDERATIONS

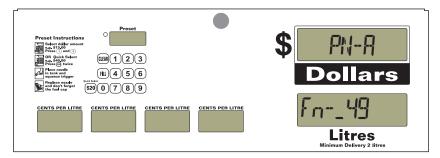
Entering allocation limits of zero results in no limit being set for stack B.

In Forecourt Controller mode, allocation limits are usually set remotely from the forecourt controller. If an allocation limit is set at the pump and a new limit is sent from the controller, the lesser of the two amounts becomes the valid limit.

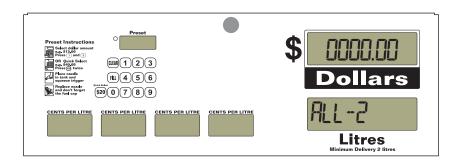
Allocation limits may be set for dollars value but **not** for litres value.



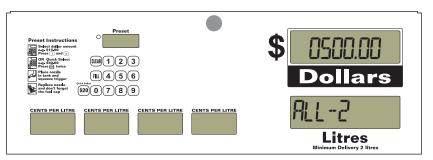
4, **9**



FILL)



 \bigcirc 5, \bigcirc , \bigcirc (\$500 used in this example)



to confirm the entry.

(Associated functions: Fn 30 Fn 70 Fn 90.)

PUMP STACK TEST STACK B

DESCRIPTION

Allows testing of and provides data relating to a variety of stack functions. Whilst within the function, various operations can be carried out on the valves and motors of the stack. See CONSIDERATIONS for a comprehensive explanation of these operations.

RANGE

N/A.

DEFAULT

N/A.

CONSIDERATIONS

A stack test will check that fuel is flowing correctly and should be used to flush the pipes and hoses and prime the system during installation.



When the holster panel is connected, if the nozzle switch cable is plugged into the Logic PCB and any nozzles are NOT in their holsters (i.e. if any of the holster switches are open), the motor of that module will start running.

Switches on the Logic PCB are left in the off (closed) position when shipped. (OFF = towards the centre of the PCB)

If using the test on an LPG hose, affix the LPG nozzle(s) to an approved container for collection of pumped fluid/gas, or to the vapour return nozzle test port (acme thread) to return fluid to storage. Refer to the MULTIPEC2 9000 Parts Manual for the location and description of the vapour return nozzle test port.

The CENTS PER LITRE readout shows two pairs of digits, separated by 2 (or 3) dots. The first (left) pair relates to the front hose, while the second (right) pair relates to the rear hose.

Flow Rate

The first digit of each pair shows the flow rate of the hose. A figure of between 2 and 5 is normal, indicating approximately 20 to 50 litres per minute.



Encoder Errors

The second digit of each pair indicates whether the encoder is generating errors when fluid is flowing. This digit can display any figure, but must remain constant. A changing figure shows that errors are being detected.

Nozzle Switch Indicator

In the middle of each pair of digits, a point indicates the status of the hose's nozzle switch. If a point is present, the nozzle switch circuit is open, i.e. the nozzle is in the lifted state. Absence of a point in the display indicates that the nozzle is in the down (holstered) state, or closed-circuit.

Float Switch Indicator

If a sump float switch is fitted and activated, the lowest centre point indicates its status. If a point is displayed, the switch is open (i.e. it is raised, indicating fluid in the sump) or the circuit jumper is disconnected. Absence of a point indicates that the sump float switch is in the down or closed circuit state (not activated).

Air Sense Indicator (Not LPG modules)

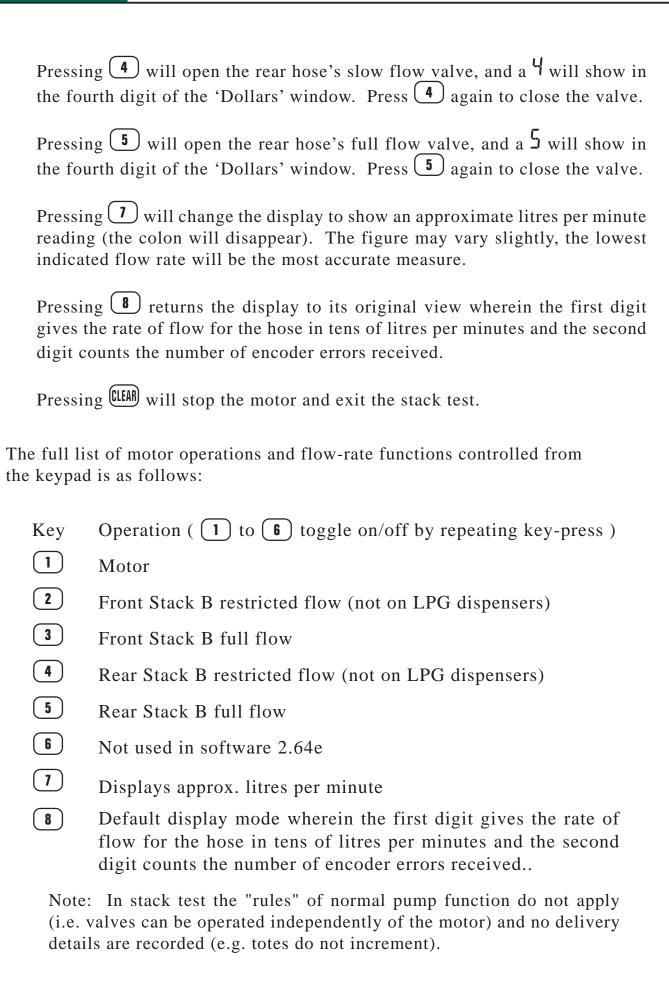
Older diesel modules may incorporate air sense circuitry. The indicator for this is the bottom point in the middle of the four digits in the CENTS PER LITRE window (see figures in the procedure section). When air is sensed in the module, the vacuum switch is activated and the circuit is opened, flow is automatically reduced to allow the air/vapour to be eliminated. Note that, for pump or dispenser modules, if the air sense jumpers (at J1, J2, J3 on the Logic PCB) have been accidentally disconnected, the module will only deliver fuel at the slow rate as the data indicates that air/vapour is present.

During these operations the 'Dollars' window will display information regarding the hoses in use and the motor status.

Pressing \bigcup will turn on the motor, and a i will show in the first digit of the 'Dollars' window. Press \bigcap again to turn it off.
Pressing will open the front hose's slow flow valve, and a will show in the second digit of the 'Dollars' window. Press again to close the valve.
Pressing (3) will open the front hose's full flow valve, and a 3 will show in

the fourth digit of the 'Dollars' window. Press 3 again to close the valve.

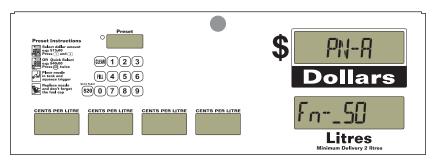




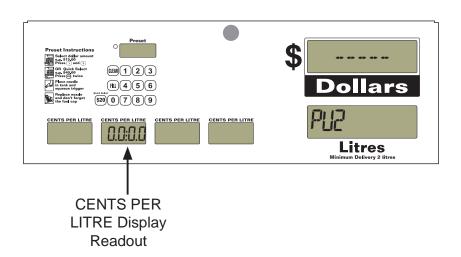


Function 50 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

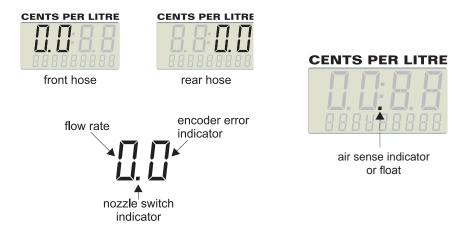




FILL)



The CENTS PER LITRE readout shows two pairs of digit, separated by two (or three) dots. The first left pair relates to the front hose, while the second (right) pair relates to the rear hose.





5

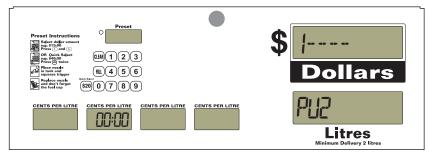
5

5

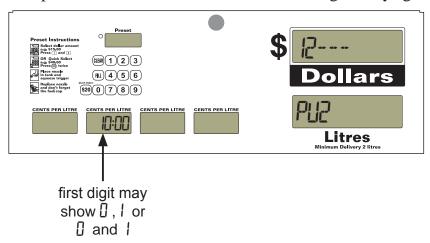
From this point in the stack test, operations can be performed in the specific order required by the tester. The following illustrations are examples of what the displays would show during these operations.

Motor operation and flow rates are controlled from the keypad.

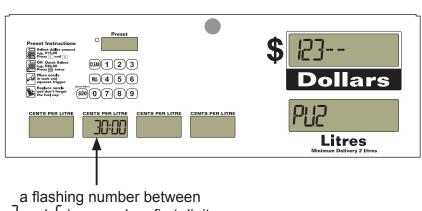
to turn on the motor. Pressing the key again toggles on/off.



2 to open the front restricted flow valve. Pressing the key again toggles on/off.



to open the front full flow valve. Pressing the key again toggles on/off.



² and ⁵ is normal on first digit

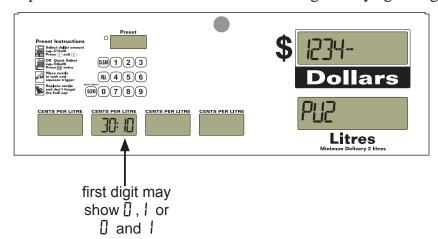
3

3

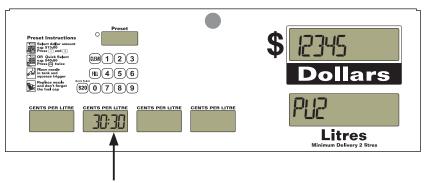
5



to open the rear restricted flow valve. Pressing the key again toggles on/off.

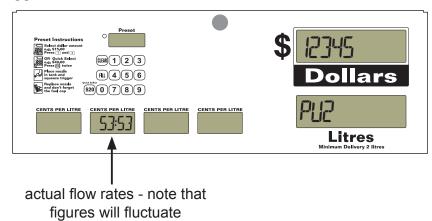


to open the rear full flow valve. Pressing the key again toggles on/off.



a flashing number between 2 and 5 is normal on first digit

to show actual flow rates for front and rear. Pressing the key again toggles on/off.



CLEAR to exit the stack test.



SETTING PUMP PRICES STACK B

DESCRIPTION

Sets grade prices at the pump.

RANGE

0000 to 9999

The function requires four digits from 0000 to 9999 to be entered. Although this is the range, the FDS will not operate with a zero price. Therefore the acceptable input is from 000. I (cents per litre) to 999.9 (cents per litre).

DEFAULT

0000

CONSIDERATIONS

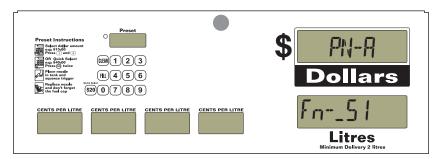
Applicable to FDS's in Standalone Mode only.

The hoses need to be activated before the prices can be set. Refer to Function 42.

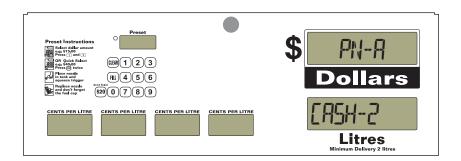
The price change takes one minute to complete from step 4 (confirming the entry) when the diagnostics switch is set to "RUN". No deliveries can be made during this time.

Always key in the new price as a full 4 digit sequence, e.g. to set to 98.9 cents per litre, enter (1), (3), (8), (9).

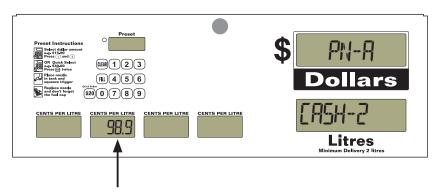
5, **1**



FILL)



0, **9**, **8**, **9** (98.9 cents used in this example)



price change is applied to and displayed on both sides

to confirm the entry.



NOT IN USE

Historically assigned to Setting Pump Prices for credit transactions. Pump prices are now only available for cash sales mode of payment.



(Associated functions: Fn 33 Fn 73 Fn 93.)

PRESET DELIVERY ALLOWED

DESCRIPTION

Sets whether or not preset deliveries are allowed on the FDS.

RANGE

```
[] (inactive) or | (active).
```

DEFAULT

1.

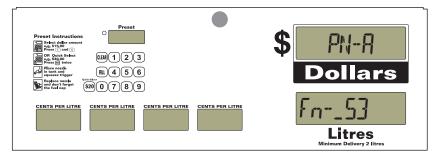
CONSIDERATIONS

If the function is set to I, and the pump is switched to 'RUN' mode, the Preset window displays I. σ . If the function is set to I, and the pump is switched to 'RUN' mode, the Preset window is blank.

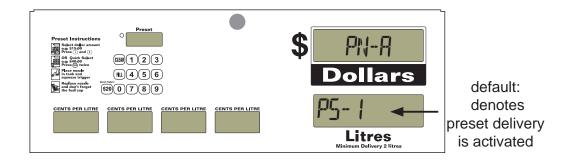


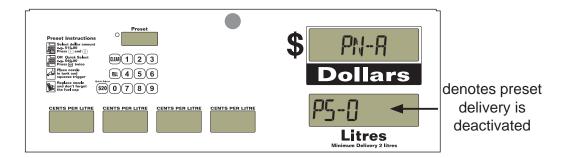
(NOTE THAT THIS EXAMPLE SETS PRESET DELIVERIES AS ALLOWED)





(FILL)





to confirm the entry.

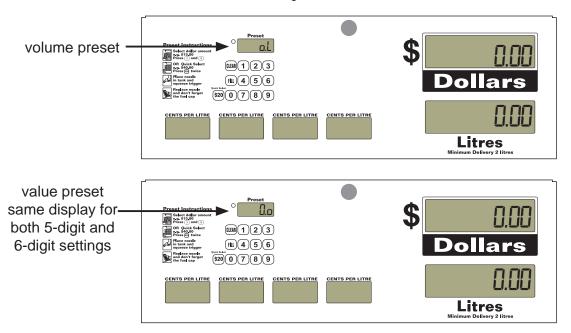


5

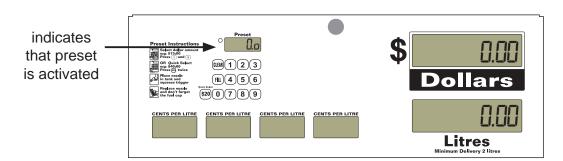
5

Presetting values (PEC protocol only):

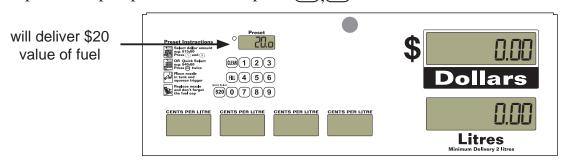
An improvement over vC2.64e is the ability to easily determine whether the pump has been set to either volume or value preset delivery (Function 13). If volume preset, the Preset window shows \Box . while if it is value preset, the Preset window shows \Box .



in order to preset the fuel delivery to a dollar value, as in this example, ensure preset delivery is activated, exit the function mode by shifting the diagnostic switch from "SET" to "RUN"



enter the preset amount from the acceptable range (1 to 999). For example, to preset the pump to deliver \$20, press (2) (0)





DOES NOT EXIST







NOT IN USE

This LPG-specific stack B function is present in the software but is not in use as LPG is only permitted in stack A.



NOT IN USE

This LPG-specific stack B function is present in the software but is not in use as LPG is only permitted in stack A.











SETTING THE HOSES ACTIVE HOSE A3

DESCRIPTION

Set hose A3 as active.

RANGE

[] (inactive) or | (active).

DEFAULT

Ω.

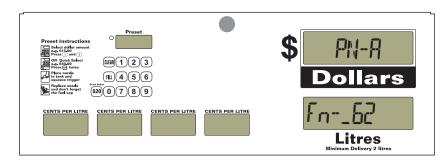
CONSIDERATIONS

The table below details the relationship between the related function numbers and the position of the hoses they activate:

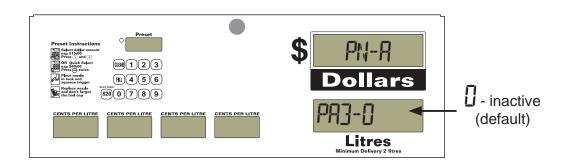
Fn	DEFAULT LITRES DISPLAY	HOSE POSITION
25	PA 1-0	1 Front
23	P] -0	1 Rear
42	PA2-0	2 Front
43	P32-0	2 Rear
62	PA3-0	3 Front
63	P33-0	3 Rear
82	PA4-0	4 Front
83	P] 4-()	4 Rear



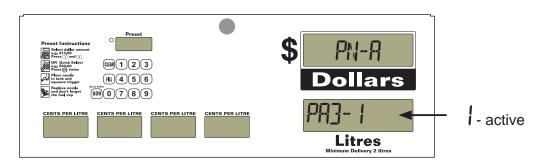
6, **2**



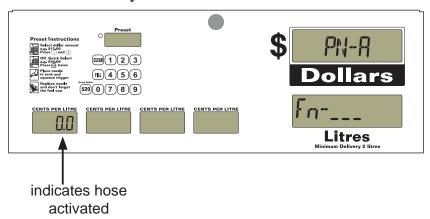
FILL)



 \subseteq 1



to confirm the entry and return to functions mode.





SETTING THE HOSES ACTIVE HOSE B3

DESCRIPTION

Set hose B3 as active.

RANGE

[] (inactive) or | (active).

DEFAULT

Ω.

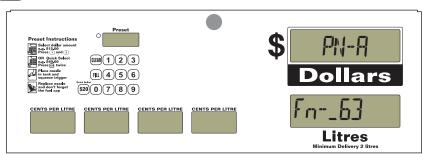
CONSIDERATIONS

The table below details the relationship between the related function numbers and the position of the hoses they activate:

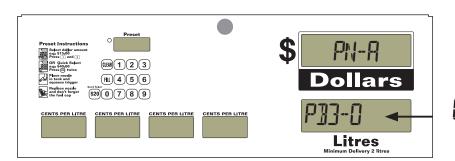
Fn	DEFAULT LITRES DISPLAY	HOSE POSITION
22	PA 1-0	1 Front
23	P] -0	1 Rear
42	PA2-0	2 Front
43	P32-0	2 Rear
62	PA3-0	3 Front
63	P]]3-0	3 Rear
82	PA4-0	4 Front
83	P] 4-()	4 Rear





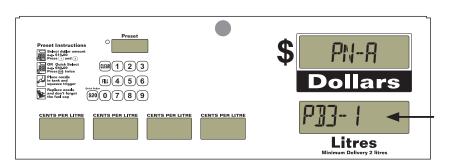


FILL)



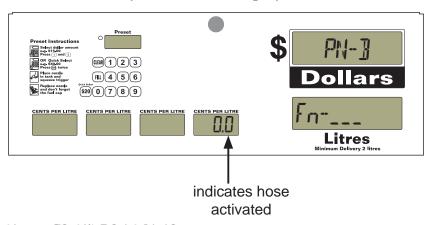
- inactive (default)

 \subseteq 1



l - active

to confirm the entry. Results as displayed on rear side.





TEST DELIVERY SIDE A (FRONT) [HOSE 3]

DESCRIPTION

Permits a test delivery on front side of the FDS which is not sent to the POS. Although this and associated functions are detailed as hose-specific (e.g. $F \cap b = 1$) they are applicable to any hose on that side which is set as active.

RANGE

N/A

DEFAULT

N/A

CONSIDERATIONS

Applicable to Forecourt Controlled FDS's only.

Totes are incremented during the delivery.

The front and rear displays behave differently during these functions depending on which side's display is being used to enter the function and which side the delivering hose is on.



Dollars and Litres show

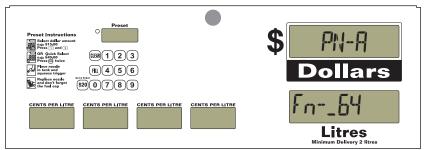
either the last

sale details or zeros

PROCEDURE

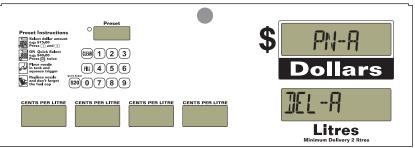
Function 64 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.





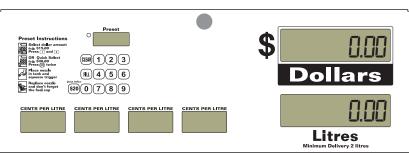
grade prices will display in active CENTS PER LITRE windows





grade prices will display in active CENTS PER LITRE windows

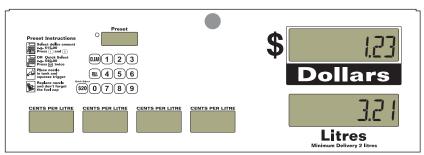




grade prices will display in active CENTS PER LITRE windows



Set the diagnostic switch to "RUN" and then deliver fuel from a front hose.



delivery details will be shown in the Dollars and Litres windows during and after delivery

grade price will display in dispensing CENTS PER LITRE window

Either perform further test deliveries or turn the power off and turn it on again to get back into function mode.





TEST DELIVERY SIDE B (REAR) [HOSE 3]

DESCRIPTION

Permits a test delivery on rear side of the FDS which is not sent to the POS. Although this and associated functions are detailed as hose-specific (e.g. Fn55 = hose B3) they are applicable to any hose on that side which is set as active.

RANGE

N/A

DEFAULT

N/A

CONSIDERATIONS

Applicable to Forecourt Controlled FDS's only.

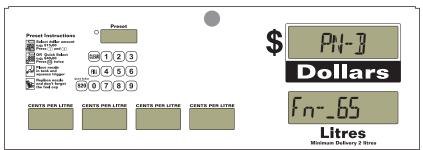
Totes are incremented during the delivery.

The front and rear displays behave differently during these functions depending on which side's display is being used to enter the function and which side the delivering hose is on.



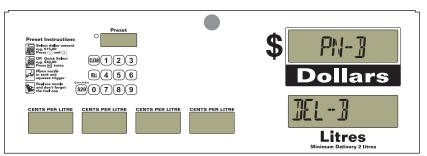
Function 65 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.





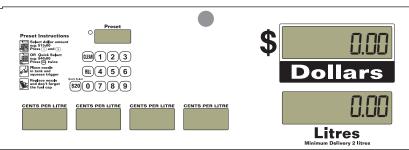
grade prices will display in active CENTS PER LITRE windows





grade prices will display in active CENTS PER LITRE windows



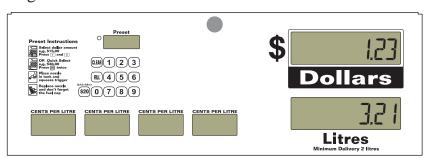


grade prices will display in active CENTS PER LITRE windows

Dollars and Litres show either the last sale details or zeros



Set the diagnostic switch to "RUN" and then deliver fuel from a front hose.



delivery details will be shown in the Dollars and Litres windows during and after delivery

grade price will display in dispensing CENTS PER LITRE window

Either perform further test deliveries or turn the power off and turn it on again to get back into function mode.





READING ELECTRONIC TOTES HOSE A3

DESCRIPTION

Displays the total value and volume delivered from hose A3 since the last RAM Clear ($Fn \parallel 1$).

Associated functions read the electronic tote data for other hoses, as explained in the following table:

Fn	HOSE ID CODE	HOSE POSITION
26	A I	1 Front
27	31	1 Rear
46	A5	2 Front
47	32	2 Rear
66	A3	3 Front
67	33	3 Rear
86	A4	4 Front
87	34	4 Rear

RANGE

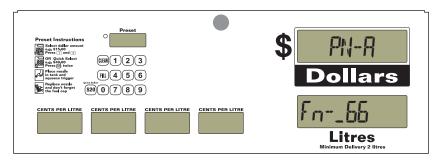
N/A

DEFAULT

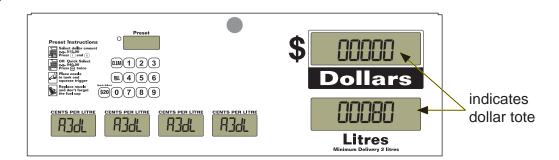
N/A



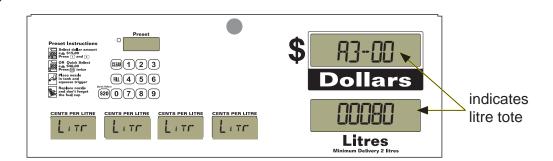




FILL)



FILL)



to exit and return to functions mode. Alternatively, the display will show the dollar value for approximately 20 seconds followed by the litre value for approximately 10 seconds before returning to functions mode.



READING ELECTRONIC TOTES HOSE B3

DESCRIPTION

Displays the total value and volume delivered from hose B3 since the last RAM Clear ($Fn \parallel 1$).

Associated functions read the electronic tote data for other hoses, as explained in the following table:

Fn	HOSE ID CODE	HOSE POSITION
26	A I	1 Front
27	31	1 Rear
46	A5	2 Front
47	32	2 Rear
66	Я3	3 Front
67	33	3 Rear
86	A4	4 Front
87	34	4 Rear

RANGE

N/A

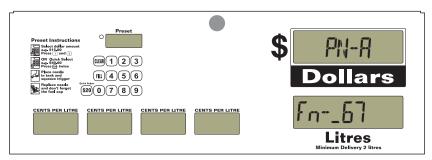
DEFAULT

N/A

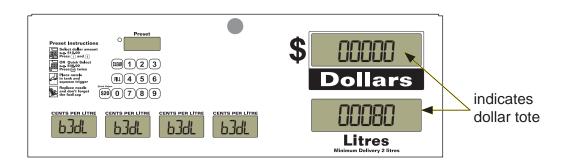


(NOTE THAT THESE ILLUSTRATIONS SHOW THE PROCEDURE AS CARRIED OUT ON THE REAR OF THE FDS)

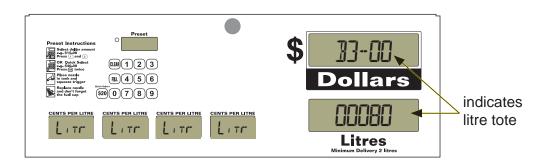




FILL)



FILL)



to exit and return to functions mode. Alternatively, the display will show the dollar value for approximately 20 seconds followed by the litre value for approximately 10 seconds before returning to functions mode.



(Associated functions: Fn29 Fn49 Fn89.)

SETTING ALLOCATION LIMITS STACK C

DESCRIPTION

Sets the maximum whole-dollar value for transactions for stack C.

RANGE

5-digit mode: 000 to 990;

6-digit mode: 0000 to 9990.

DEFAULT

5-digit mode: [[][]

6-digit mode: 0000.

CONSIDERATIONS

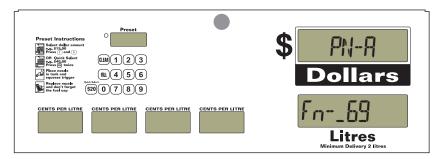
Entering allocation limits of zero results in no limit being set for stack C.

In Forecourt Controller mode, allocation limits are usually set remotely from the forecourt controller. If an allocation limit is set at the pump and a new limit is sent from the controller, the lesser of the two amounts becomes the valid limit.

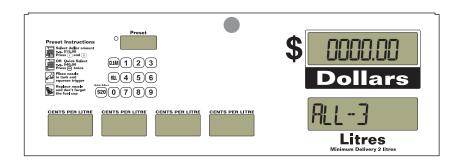
Allocation limits may be set for dollars value but **not** for litres value.



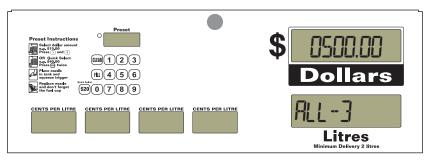
6,9



(FILL)



5, **0**, **0** (\$500 used in this example)



to confirm the entry.

(Associated functions: Fn 30 Fn 50 Fn 90.)

PUMP STACK TEST STACK C

DESCRIPTION

Allows testing of and provides data relating to a variety of stack functions. Whilst within the function, various operations can be carried out on the valves and motors of the stack. See CONSIDERATIONS for a comprehensive explanation of these operations.

RANGE

N/A.

DEFAULT

N/A.

CONSIDERATIONS

A stack test will check that fuel is flowing correctly and should also be used to flush the pipes and prime the system during installation.



When the holster panel is connected, if the nozzle switch cable is plugged into the Logic PCB and any nozzles are NOT in their holsters (i.e. if any of the holster switches are open), the motor of that module will start running.

Switches on the Logic PCB are left in the off (closed) position when shipped. (OFF = towards the centre of the PCB)

If using the test on an LPG hose, affix the LPG nozzle(s) to an approved container for collection of pumped fluid/gas, or to the vapour return nozzle test port (acme thread) to return fluid to storage. Refer to the MULTIPEC2 9000 Parts Manual for the location and description of the vapour return nozzle test port.

The CENTS PER LITRE readout shows two pairs of digits, separated by 2 (or 3) dots. The first (left) pair relates to the front hose, while the second (right) pair relates to the rear hose.

Flow Rate

The first digit of each pair shows the flow rate of the hose. A figure of between 2 and 5 is normal, indicating approximately 20 to 50 litres per minute.



Encoder Errors

The second digit of each pair indicates whether the encoder is generating errors when fluid is flowing. This digit can display any figure, but must remain constant. A changing figure shows that errors are being detected.

Nozzle Switch Indicator

In the middle of each pair of digits, a point indicates the status of the hose's nozzle switch. If a point is present, the nozzle switch circuit is open, i.e. the nozzle is in the lifted state. Absence of a point in the display indicates that the nozzle is in the down (holstered) state, or closed-circuit.

Float Switch Indicator

If a sump float switch is fitted and activated, the lowest centre point indicates its status. If a point is displayed, the switch is open (i.e. it is raised, indicating fluid in the sump) or the circuit jumper is disconnected. Absence of a point indicates that the sump float switch is in the down or closed circuit state (not activated).

Air Sense Indicator (Not LPG modules)

Older diesel modules may incorporate air sense circuitry. The indicator for this is the bottom point in the middle of the four digits in the CENTS PER LITRE window (see figures in the procedure section). When air is sensed in the module, the vacuum switch is activated and the circuit is opened, flow is automatically reduced to allow the air/vapour to be eliminated. Note that, for pump or dispenser modules, if the air sense jumpers (at J1, J2, J3 on the Logic PCB) have been accidentally disconnected, the module will only deliver fuel at the slow rate as the open circuit indicates that air/vapour is present.

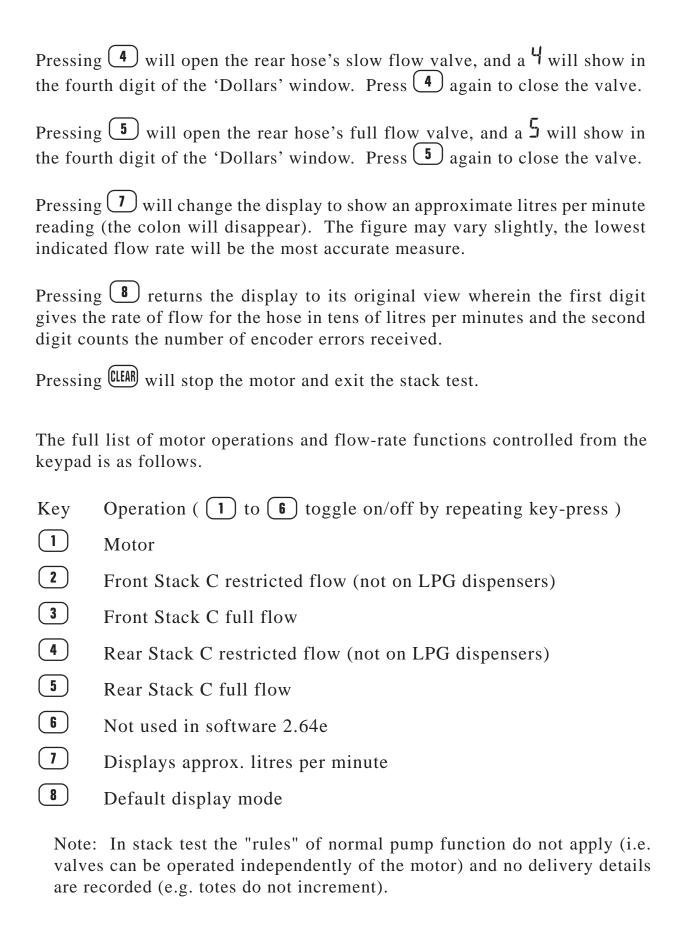
During these operations the 'Dollars' window will display information regarding the hoses in use and the motor status.

\mathcal{C}		a will show in the first digit of
the 'Dollars' wi	ndow. Press 1 again to	turn it off.

Pressing will open the front hose's slow flow valve, and a will show in the second digit of the 'Dollars' window. Press again to close the valve.

Pressing 3 will open the front hose's full flow valve, and a 3 will show in the third digit of the 'Dollars' window. Press 3 again to close the valve.

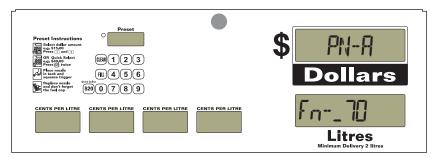




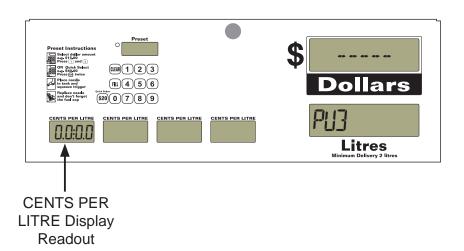


Function 70 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

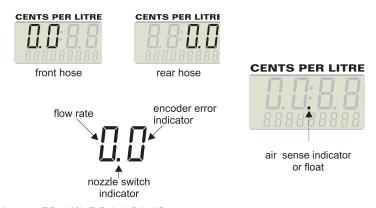




FILL)



The CENTS PER LITRE readout shows two pairs of digit, separated by two (or three) dots. The first left pair relates to the front hose, while the second (right) pair relates to the rear hose.





5

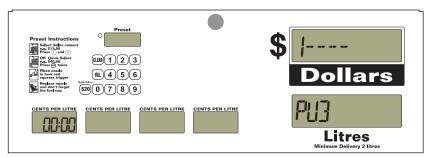
5

5

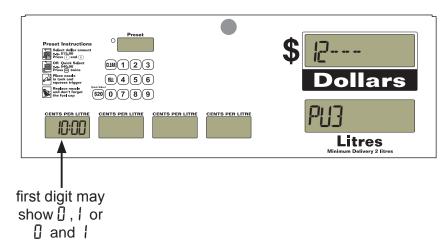
From this point in the stack test, operations can be performed in any order required by the tester. The following illustrations are examples of what the displays would show during these operations.

Motor operation and flow rates are controlled from the keypad.

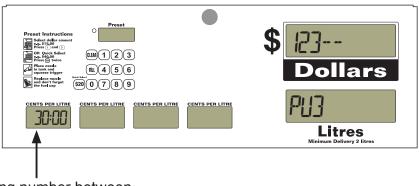
1 to turn on the motor. Pressing the key again toggles on/off.



to open the front restricted flow valve. Pressing the key again toggles on/off.



3 to open the front full flow valve. Pressing the key again toggles on/off.

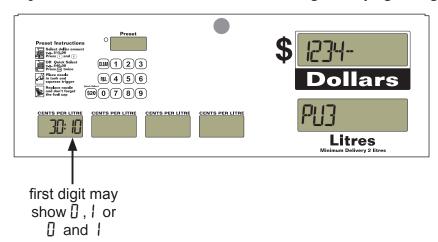


a flashing number between and 5 is normal on first digit

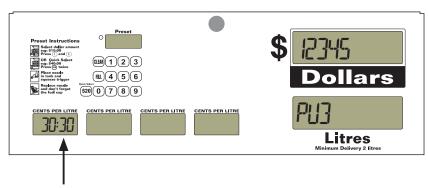
3



to open the rear restricted flow valve. Pressing the key again toggles on/off.

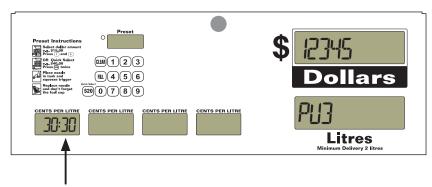


to open the rear full flow valve. Pressing the key again toggles on/off.



a flashing number between and 5 is normal on first digit

to show actual flow rates for front and rear. Pressing the key again toggles on/off.



a flashing number between $\frac{2}{3}$ and $\frac{5}{3}$ is normal on first digit

to exit the stack test.

5



SETTING PUMP PRICES STACK C

DESCRIPTION

Sets grade prices at the pump.

RANGE

0000 to 9999

The function requires four digits from 0000 to 9999 to be entered. Although this is the range, the FDS will not operate with a zero price. Therefore the acceptable input is from 000. I (cents per litre) to 999.9 (cents per litre).

DEFAULT

0000

CONSIDERATIONS

Applicable to FDS's in Standalone Mode only.

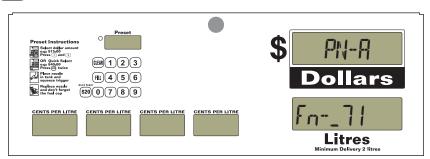
The hoses need to be activated before the prices can be set. Refer to Function 62.

The price change takes one minute to complete from step 4 (confirming the entry) when the diagnostics switch is set to "RUN". No deliveries can be made during this time.

Always key in the new price as a full 4 digit sequence, e.g. to set to 98.9 cents per litre, enter (1), (3), (8), (9).



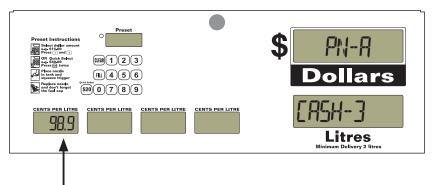
 (\mathcal{F}) , (1)



(FILL)



0, **9**, **8**, **9** (98.9 cents used in this example)



price change is applied to and displayed on both sides

to confirm the entry.



NOT IN USE

Historically assigned to Setting Pump Prices for credit transactions. Pump prices are now only available for cash mode of payment.

(Associated functions: Fn 33 Fn 53 Fn 93.)

PRESET DELIVERY ALLOWED

DESCRIPTION

Sets whether or not preset deliveries are allowed on the FDS.

RANGE

```
[] (inactive) or | (active).
```

DEFAULT

1.

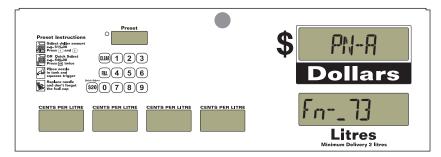
CONSIDERATIONS

These associated functions may initially appear to be only grade-specific due to their numbering. However, they ALL act on the whole FDS. Furthermore, there is no hierarchy within these functions, that is to say that they are ALL over-ridden by setting ANY of these associated functions. For example, if an FDS has been set to allow presets using Fn 73 (setting to 1) it will be automatically set to 0 if any of Fn 33/Fn 53/Fn 93 have been set to 0. This can be confirmed by once again entering Fn 73, which will now show as being set to 0.

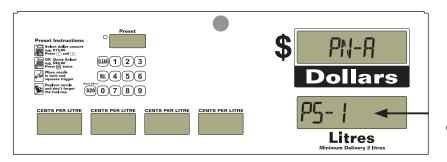


(NOTE THAT THIS EXAMPLE SETS PRESET DELIVERIES AS ALLOWED)

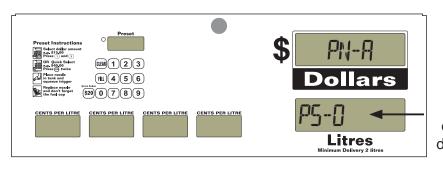




FILL)



default: denotes preset delivery is activated



denotes preset delivery is deactivated

to confirm the entry.

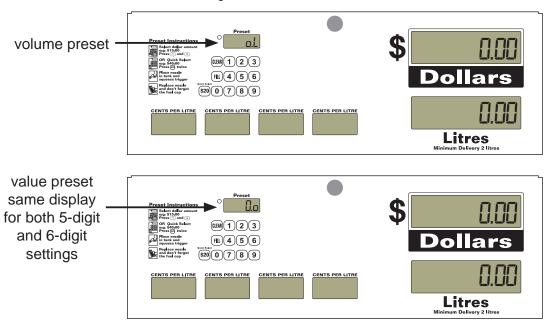


5

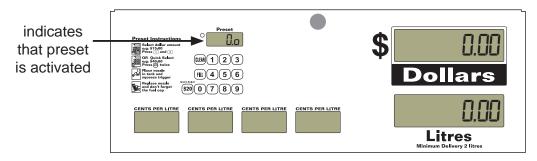
5

Presetting values (PEC protocol only):

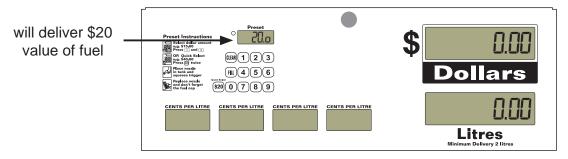
An improvement over vC2.64e is the ability to easily determine whether the pump has been set to either volume or value preset delivery (Function 13). If volume preset, the Preset window shows 0.L while if it is value preset, the Preset window shows 0.D



in order to preset the fuel delivery to a dollar value, as in this example, ensure preset delivery is activated, exit the function mode by shifting the diagnostic switch from "SET" to "RUN"



enter the preset amount from the acceptable range (1 to 999). For example, to preset the pump to deliver \$20, press (2). (1)













NOT IN USE

This LPG-specific stack C function is present in the software but is not in use as LPG is only permitted in stack A.





NOT IN USE

This LPG-specific stack C function is present in the software but is not in use as LPG is only permitted in stack A.













SETTING THE HOSES ACTIVE HOSE A4

DESCRIPTION

Set hose A4 as active.

RANGE

[] (inactive) or | (active).

DEFAULT

[].

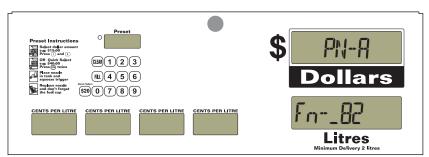
CONSIDERATIONS

The table below details the relationship between the related function numbers and the position of the hoses they activate:

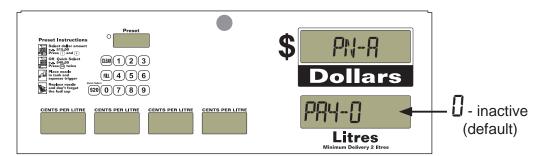
Fn	DEFAULT LITRES DISPLAY	HOSE POSITION
22	PA 1-0	1 Front
23	P] -0	1 Rear
42	PA2-0	2 Front
43	P32-0	2 Rear
62	PA3-0	3 Front
63	P]]3-0	3 Rear
82	PA4-0	4 Front
83	P]]4-()	4 Rear



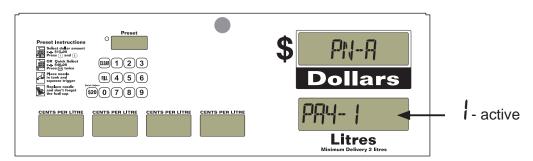




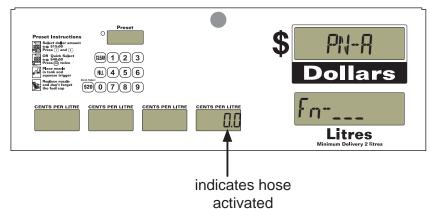
(FILL)



 \subseteq 1



to confirm the entry and return to functions mode.





SETTING THE HOSES ACTIVE HOSE B4

DESCRIPTION

Set hose B4 as active.

RANGE

[] (inactive) or

(active).

DEFAULT

Ω.

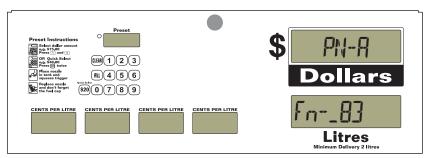
CONSIDERATIONS

The table below details the relationship between the related function numbers and the position of the hoses they activate:

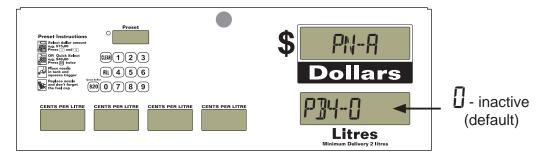
Fn	DEFAULT LITRES DISPLAY	HOSE POSITION
55	PA 1-0	1 Front
53	P] -0	1 Rear
42	PA2-0	2 Front
43	P32-0	2 Rear
62	PA3-0	3 Front
63	P]]3-0	3 Rear
82	PA4-0	4 Front
83	P] 4-()	4 Rear

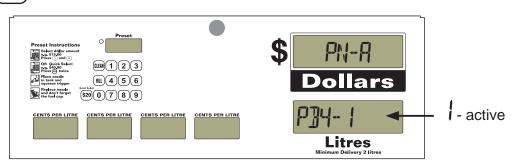




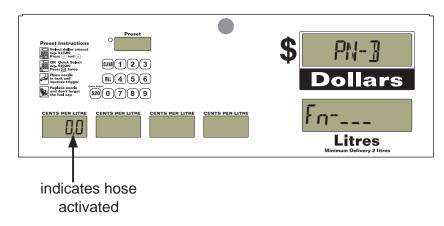


FILL)





to confirm the entry. Results as displayed on the rear side





TEST DELIVERY SIDE A (FRONT) [HOSE 4]

DESCRIPTION

Permits a test delivery on front side of the FDS which is not sent to the POS. Although this and associated functions are detailed as hose-specific (e.g. Fn B4 = hose A4) they are applicable to any hose on that side which is set as active.

RANGE

N/A

DEFAULT

N/A

CONSIDERATIONS

Applicable to Forecourt Controlled FDS's only.

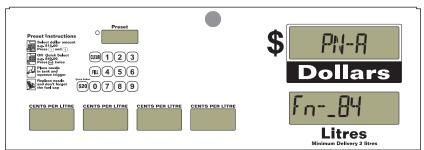
Totes are incremented during the delivery.

The front and rear displays behave differently during these functions depending on which side's display is being used to enter the function and which side the delivering hose is on.

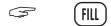


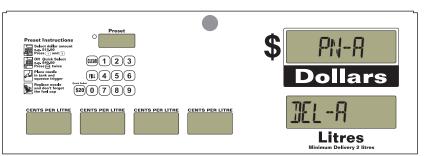
Function 84 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.





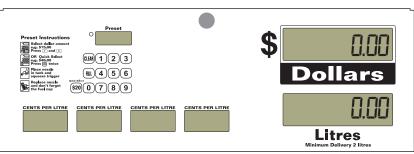
grade prices will display in active CENTS PER LITRE windows





grade prices will display in active CENTS PER LITRE windows



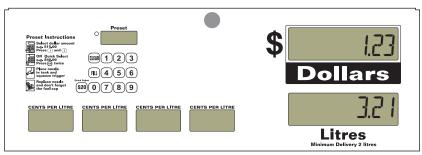


Dollars and Litres show either the last sale details or zeros

grade prices will display in active CENTS PER LITRE windows



Set the diagnostic switch to "RUN" and then deliver fuel from a front hose.



delivery details will be shown in the Dollars and Litres windows during and after delivery

grade price will display in dispensing CENTS PER LITRE window

Either perform further test deliveries or turn the power off and turn it on again to get back into function mode.





TEST DELIVERY SIDE B (REAR) [HOSE 4]

DESCRIPTION

Permits a test delivery on rear side of the FDS which is not sent to the POS. Although this and associated functions are detailed as hose-specific (e.g. FnB5 = hose B4) they are applicable to any hose on that side which is set as active.

RANGE

N/A

DEFAULT

N/A

CONSIDERATIONS

Applicable to Forecourt Controlled FDS's only.

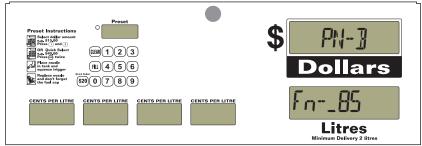
Totes are incremented during the delivery.

The front and rear displays behave differently during these functions depending on which side's display is being used to enter the function and which side the delivering hose is on.



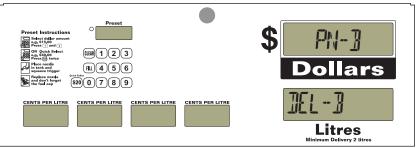
Function 85 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.





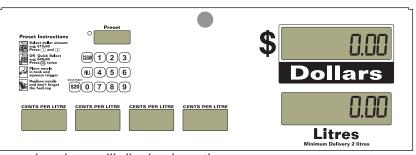
grade prices will display in active CENTS PER LITRE windows





grade prices will display in active CENTS PER LITRE windows



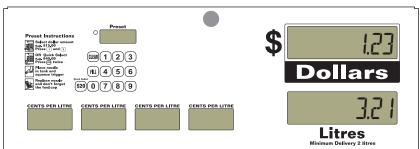


grade prices will display in active CENTS PER LITRE windows

Dollars and Litres show either the last sale details or zeros



Set the diagnostic switch to "RUN" and then deliver fuel from a front hose.



grade price will display in dispensing CENTS PER LITRE window

delivery details will be shown in

the Dollars and

Litres windows

during and after delivery

Either perform further test deliveries or turn the power off and turn it on again to get back into function mode.





READING ELECTRONIC TOTES HOSE A4

DESCRIPTION

Displays the total value and volume delivered from hose A3 since the last RAM Clear ($fn \parallel 0$).

Associated functions read the electronic tote data for other hoses, as explained in the following table:

Fn	HOSE ID CODE	HOSE POSITION		
26	A I	1 Front		
27	31	1 Rear		
46	A5	2 Front		
47	32	2 Rear		
66	Я3	3 Front		
67	33	3 Rear		
86	A4	4 Front		
87	34	4 Rear		

RANGE

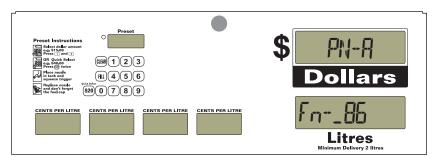
N/A

DEFAULT

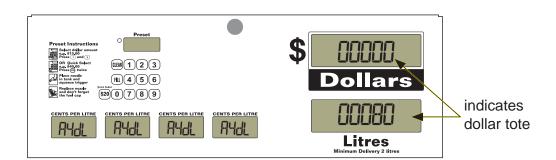
N/A



8, **6**

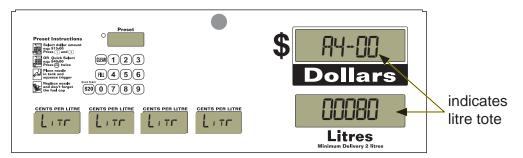


FILL)



FILL)

3



to exit and return to functions mode. Alternatively, the display will show the dollar value for approximately 20 seconds followed by the litre value for approximately 10 seconds before returning to functions mode.



READING ELECTRONIC TOTES HOSE B4

DESCRIPTION

Displays the total value and volume delivered from hose B3 since the last RAM Clear ($fn \parallel 0$).

Associated functions read the electronic tote data for other hoses, as explained in the following table:

Fn	HOSE ID CODE	HOSE POSITION		
26	A I	1 Front		
27	31	1 Rear		
46	A5	2 Front		
47	32	2 Rear		
66	Я3	3 Front		
67	33	3 Rear		
86	A4	4 Front		
87	34	4 Rear		

RANGE

N/A

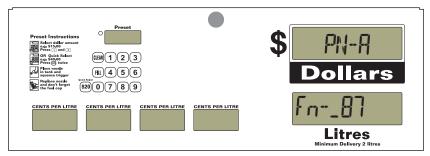
DEFAULT

N/A

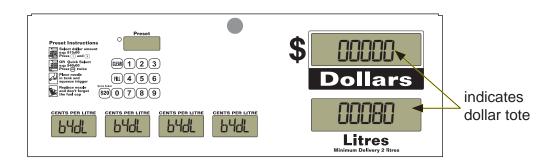


(NOTE THAT THESE ILLUSTRATIONS SHOW THE PROCEDURE AS CARRIED OUT ON THE REAR OF THE FDS)

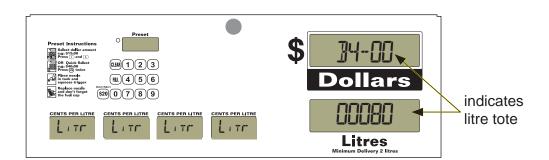




FILL)



FILL)



to exit and return to functions mode. Alternatively, the display will show the dollar value for approximately 20 seconds followed by the litre value for approximately 10 seconds before returning to functions mode.





(Associated functions: Fn29 Fn49 Fn69.)

SETTING ALLOCATION LIMITS STACK D

DESCRIPTION

Sets the maximum whole-dollar value for transactions for stack D.

RANGE

5-digit mode: 000 to 990;

6-digit mode: 0000 to 9990.

DEFAULT

5-digit mode: 000;

6-digit mode: 0000.

CONSIDERATIONS

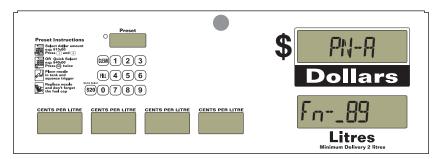
Entering allocation limits of zero results in no limit being set for stack D.

In Forecourt Controller mode, allocation limits are usually set remotely from the forecourt controller. If an allocation limit is set at the pump and a new limit is sent from the controller, the lesser of the two amounts becomes the valid limit.

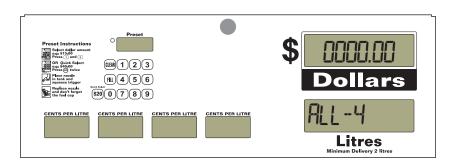
Allocation limits may be set for dollars value but **not** for litres value.



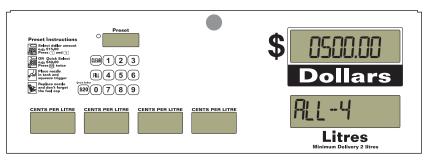
8,9



FILL)



 \bigcirc **5**, **0**, **0** (\$500 used in this example)



to confirm the entry.

(Associated functions: Fn 30 Fn 50 Fn 70.)

PUMP STACK TEST STACK D

DESCRIPTION

Allows testing of and provides data relating to a variety of stack functions. Whilst within the function, various operations can be carried out on the valves and motors of the stack. See CONSIDERATIONS for a comprehensive explanation of these operations.

RANGE

N/A.

DEFAULT

N/A.

CONSIDERATIONS

A stack test will check that fuel is flowing correctly and should also be used to flush the pipes and hoses and prime the system during installation.



When the holster panel is connected, if the nozzle switch cable is plugged into the Logic PCB and any nozzles are NOT in their holsters (i.e. if any of the holster switches are open), the motor of that module will start running.

Switches on the Logic PCB are left in the off (closed) position when shipped. (OFF = towards the centre of the PCB)

If using the test on an LPG hose, affix the LPG nozzle(s) to an approved container for collection of pumped fluid/gas, or to the vapour return nozzle test port (acme thread) to return fluid to storage. Refer to the MULTIPEC2 9000 Parts Manual for the location and description of the vapour return nozzle test port.

The CENTS PER LITRE readout shows two pairs of digits, separated by 2 (or 3) dots. The first (left) pair relates to the front hose, while the second (right) pair relates to the rear hose.

Flow Rate

The first digit of each pair shows the flow rate of the hose. A figure of between 2 and 5 is normal, indicating approximately 20 to 50 litres per minute.



Encoder Errors

The second digit of each pair indicates whether the encoder is generating errors when fluid is flowing. This digit can display any figure, but must remain constant. A changing figure shows that errors are being detected.

Nozzle Switch Indicator

In the middle of each pair of digits, a point indicates the status of the hose's nozzle switch. If a point is present, the nozzle switch circuit is open, i.e. the nozzle is in the lifted state. Absence of a point in the display indicates that the nozzle is in the down (holstered) state, or closed-circuit.

Float Switch Indicator

If a sump float switch is fitted and activated, the lowest centre point indicates its status. If a point is displayed, the switch is open (i.e. it is raised, indicating fluid in the sump) or the circuit jumper is disconnected. Absence of a point indicates that the sump float switch is in the down or closed circuit state (not activated).

Air Sense Indicator (Not LPG modules)

Older diesel modules may incorporate air sense circuitry. The indicator for this is the bottom point in the middle of the four digits in the CENTS PER LITRE window (see figures in the procedure section). When air is sensed in the module, the vacuum switch is activated and the circuit is opened, flow is automatically reduced to allow the air/vapour to be eliminated. Note that, for pump or dispenser modules, if the air sense jumpers (at J1, J2, J3 on the Logic PCB) have been accidentally disconnected, the module will only deliver fuel at the slow rate as the open circuit indicates that air/vapour is present.

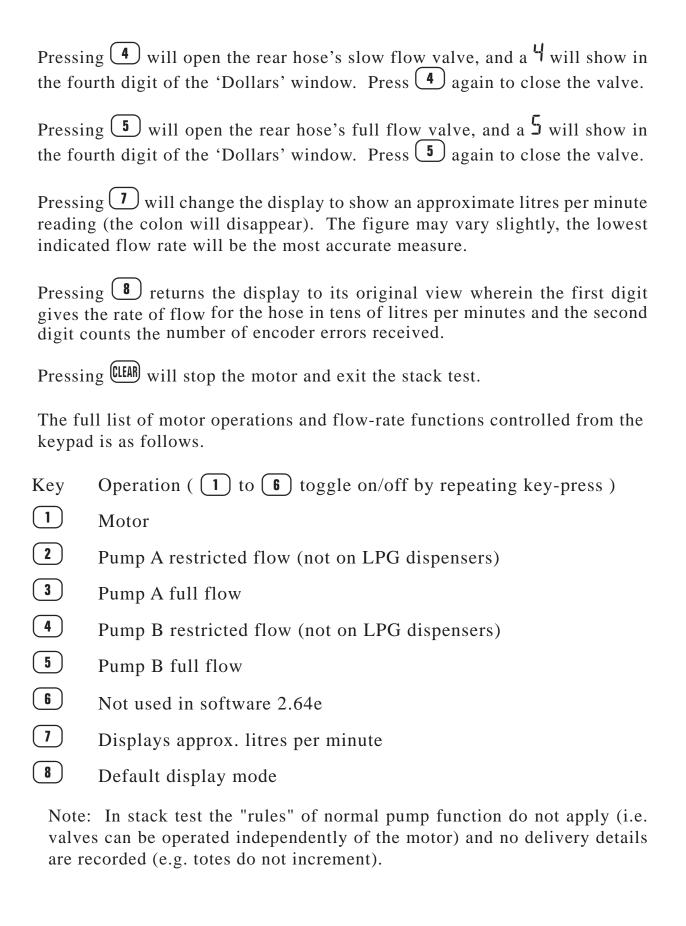
During these operations the 'Dollars' window will display information regarding the hoses in use and the motor status.

_	on the motor, and a		in the first	digit of
the 'Dollars' window.	Press 1 again to turn	it off.		

Pressing will open the front hose's slow valve, and a will show in the second digit of the 'Dollars' window. Press again to close the valve.

Pressing 3 will open the front hose's full flow valve, and a 3 will show in the third digit of the 'Dollars' window. Press 3 again to close the valve.

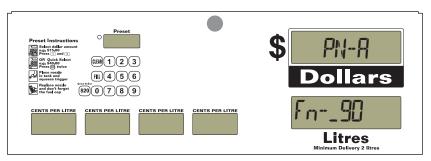




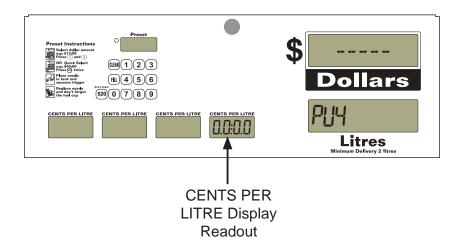


Function 90 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

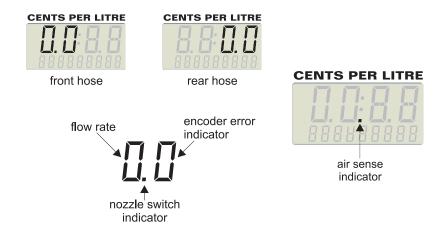




(FILL)



The CENTS PER LITRE readout shows two pairs of digit, separated by two (or three) dots. The first left pair relates to the front hose, while the second (right) pair relates to the rear hose.





5

5

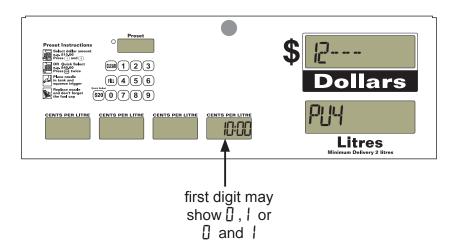
From this point in the stack test, operations can be performed in the specific order required by the tester. The following illustrations are examples of what the displays would show during these operations.

Motor operation and flow rates are controlled from the keypad.

1 to turn on the motor. Pressing the key again toggles on/off.



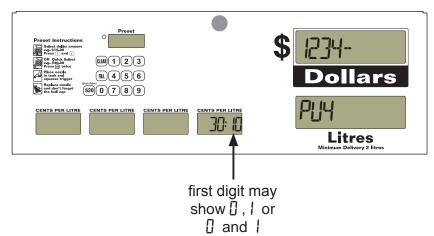
to open the front restricted flow valve. Pressing the key again toggles on/off.



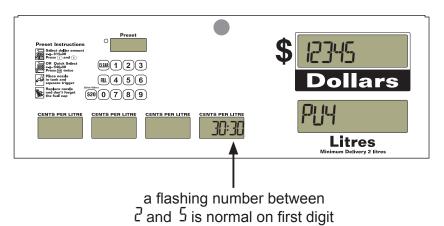
3 to open the front full flow valve. Pressing the key again toggles on/off.



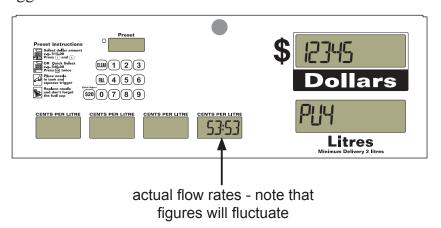
to open the rear restricted flow valve. Pressing the key again toggles on/off.



to open the rear full flow valve. Pressing the key again toggles on/off.



to show actual flow rates for front and rear. Pressing the key again toggles on/off.



to exit the stack test.

3



SETTING PUMP PRICES STACK D

DESCRIPTION

Sets grade prices at the pump.

RANGE

0000 to 9999

The function requires four digits from 0000 to 9999 to be entered. Although this is the range, the FDS will not operate with a zero price. Therefore the acceptable input is from 000. I (cents per litre) to 999.9 (cents per litre).

DEFAULT

0000

CONSIDERATIONS

Applicable to FDS's in Standalone Mode only.

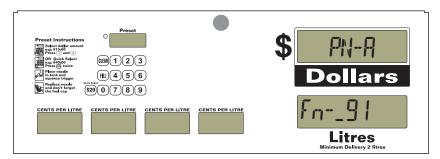
The hoses need to be activated before the prices can be set. Refer to Function 82.

The price change takes one minute to complete from step 4 (confirming the entry) when the diagnostics switch is set to "RUN". No deliveries can be made during this time.

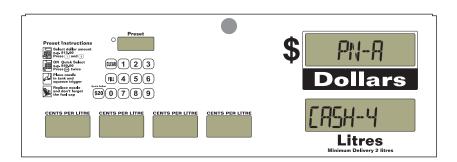
Always key in the new price as a full 4 digit sequence, e.g. to set to 98.9 cents per litre, enter (1), (3), (8), (9).



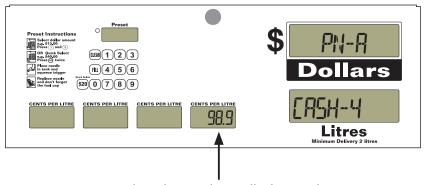




FILL)



0, **9**, **8**, **9** (98.9 cents used in this example)



price change is applied to and displayed on both sides

to confirm the entry.



NOT IN USE

Historically assigned to Setting Pump Prices for credit transactions. Pump prices are now only available for cash method of payment.



(Associated functions: Fn 33 Fn 53 Fn 73.)

PRESET DELIVERY ALLOWED

DESCRIPTION

Sets whether or not preset deliveries are allowed on the FDS.

RANGE

```
[] (inactive) or | (active).
```

DEFAULT

1.

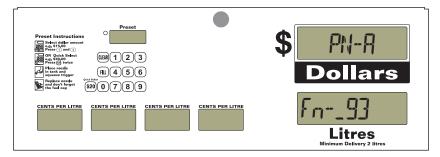
CONSIDERATIONS

These associated functions may initially appear to be only grade-specific due to their numbering. However, they ALL act on the whole FDS. Furthermore, there is no hierarchy within these functions, that is to say that they are ALL over-ridden by setting ANY of these associated functions. For example, if an FDS has been set to allow presets using fn 93 (setting to 1) it will be automatically set to 0 if any of fn 33/fn 53/fn 73 have been set to 1. This can be confirmed by once again entering fn 93, which will now show as being set to 1.

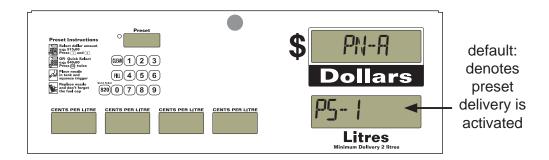


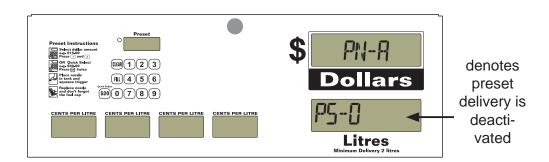
(NOTE THAT THIS EXAMPLE SETS PRESET DELIVERIES AS ALLOWED)





(FILL)





to confirm the entry.

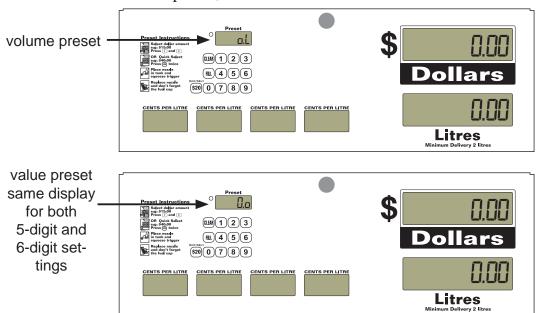


5

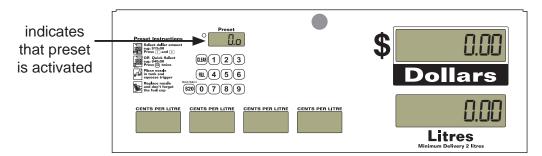
5

Presetting values (PEC protocol only):

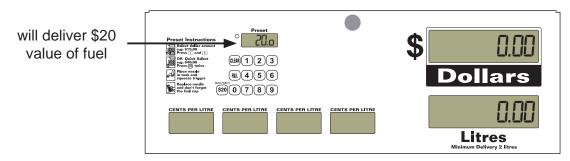
An improvement over vC2.64e is the ability to easily determine whether the pump has been set to either volume or value preset delivery (Function 13). If volume preset, the Preset window shows 0.L while if it is value preset, the Preset window shows 0.D



in order to preset the fuel delivery to a dollar value, as in this example, ensure preset delivery is activated, exit the function mode by shifting the diagnostic switch from "SET" to "RUN"



enter the preset amount from the acceptable range (1 to 999). For example, to preset the pump to deliver \$20, press (2). (1)













NOT IN USE

This LPG-specific stack D function is present in the software but is not in use as LPG is only permitted in stack A.



NOT IN USE

This LPG-specific stack D function is present in the software but is not in use as LPG is only permitted in stack A.





DOES NOT EXIST



SET CRUSH-UP TIME

(REMOVED IN 2.64g ONWARDS)

DESCRIPTION

Sets the time allocated for the crush-up process.

Vapourised fuel present in hoses and pipes needs to be re-pressurised prior to the delivery volume being measured, the crush-up time being the duration of this process.

RANGE

to 3 (seconds)

DEFAULT

3 seconds

CONSIDERATIONS

Applicable only to FDS's dispensing LPG.

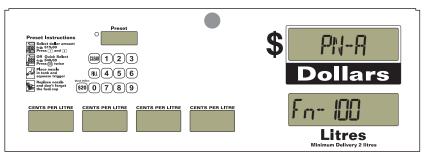
Entered value must be in complete seconds only, fractions or decimals are not permitted.

Recommended settting is \ \ \text{second.}

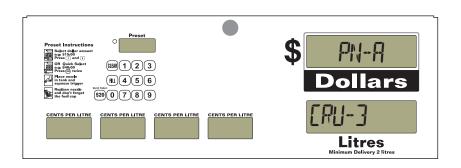


Function 100 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

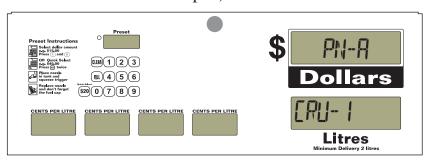




FILL)



(1 second used in this example.)



to confirm the entry.



SET OVER-SPEED TRIP

(REMOVED IN 2.64g ONWARDS)

DESCRIPTION

Sets the maximum permitted LPG flow-rate (in litres per minute) before a tripping software error (Error 56) is generated.

RANGE

50 to 99

DEFAULT

80

CONSIDERATIONS

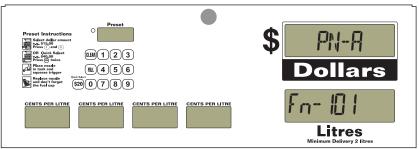
Applicable only to FDS's dispensing LPG.

Recommended setting is to a maximum of 99.

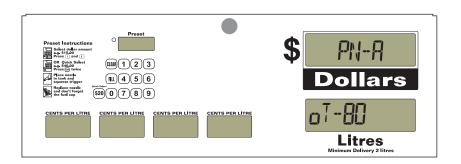


Function 101 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

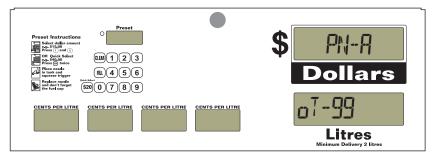




FILL)



(99 litres per minute used in this example.)



fill to confirm the entry.



VAPOUR ALARM

DESCRIPTION

Sets the maximum time that the LPG vapour probe/sensor can detect vapour before generating a fatal error ([rr 59]).

RANGE

l to 9 minutes

DEFAULT

2

CONSIDERATIONS

Applicable only to FDS's dispensing LPG.

Entered value must be in complete minutes only, fractions or decimals are not permitted.

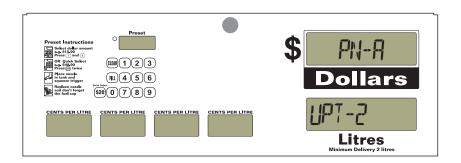


Function 102 is a high level function. Press down the agent button to gain access, and a beep will sound to confirm access.

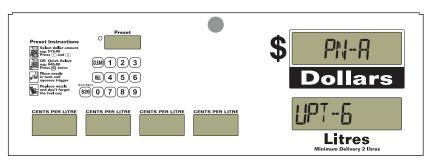




(FILL)



6 (6 minutes used in this example.)



fill to confirm the entry.



DISPLAY PROBE TEMPERATURE

DESCRIPTION

Displays the temperature reading from the probe in degrees centigrade.

RANGE

Minimum: 0°c and

Maximum: 50°c

DEFAULT

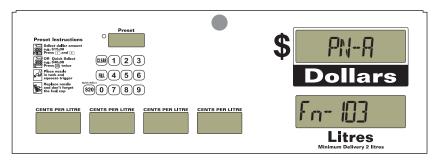
N/A

CONSIDERATIONS

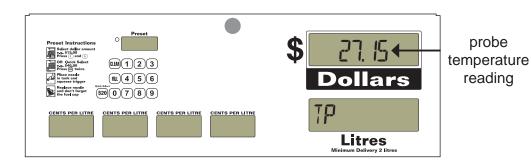
Applicable only to FDS's dispensing LPG.



(S) (1), (1), (3)



FILL



(only the CLEAR key is active at this point).

(Associated functions: Fn 37 Fn 38 Fn 107.)

DISPLAY LPG CORRECTION FACTOR

DESCRIPTION

Displays the LPG correction factor in use. The correction factor is a value which takes into account factors such as temperature and pressure/ density changes in the LPG.

RANGE

0.5000 to 1.4999

DEFAULT

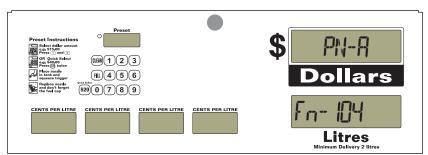
N/A

CONSIDERATIONS

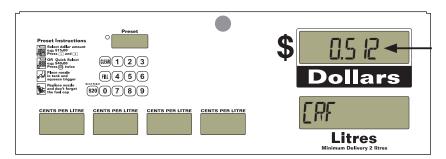
Applicable only to FDS's dispensing LPG.







FILL)



correction factor reading

(only the CLEAR key is active at this point).



DISPLAY LPG SPECIFIC GRAVITY

DESCRIPTION

Displays the LPG specific gravity reading from the probe.

RANGE

Normal acceptable values range from 505 kg/m 3 to 570 kg/m 3

DEFAULT

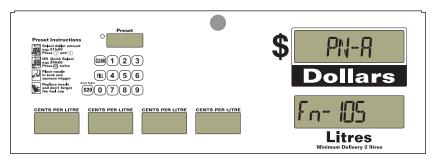
N/A

CONSIDERATIONS

Applicable only to FDS's dispensing LPG.

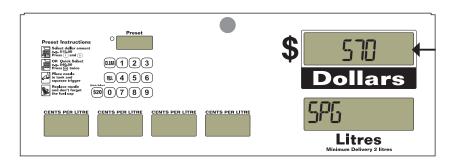






FILL)

3



specific gravity reading

(only the CLEAR) key is active at this point).



REPORT THE LAST SIX PROBE ALARMS

DESCRIPTION

Displays the last 6 (maximum) recorded probe alarms.

The newest alarm is always displayed first and the oldest is displayed last. The first displayed letter is the alarm type and the rest of the display is the alarm value (typical examples are shown in the following illustrations).

The error codes used and their associated errors are:

- C Probe comms
- G Probe generated alarm
- U Vapour present
- E Probe comms error
- F LPG flow alarm

RANGE

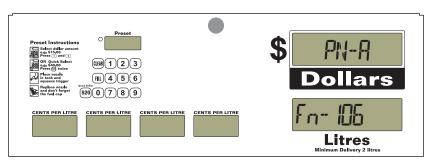
N/A

DEFAULT

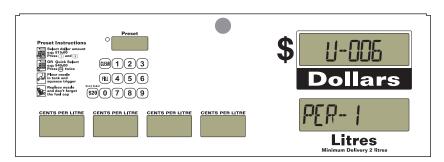
N/A



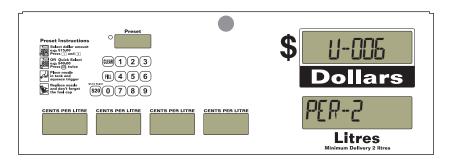




The following examples show the last six probe alarms:



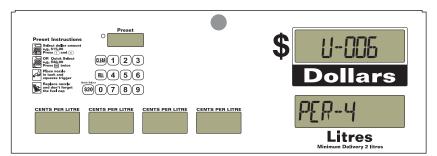
FILL)



FILL)





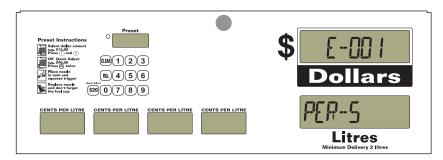


(FILL)

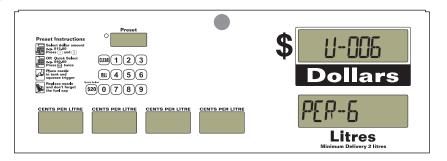
3

5

3



FILL



to take it back to function mode, otherwise, FILL will take it back to the first probe alarm



(Associated functions: Fn 37 Fn 38 Fn 104.)

DISPLAY ENCODER CONSTANT

DESCRIPTION

Displays the encoder constant value derived from the correction factor (Function 104).

RANGE

6250 to 17500

DEFAULT

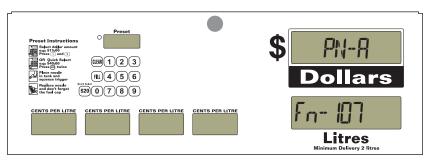
N/A

CONSIDERATIONS

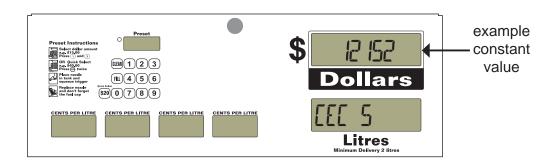
Applicable only to FDS's dispensing LPG.



1, **0**, **7**



FILL)



(only the CLEAR key is active at this point).



SET VALVE START UP SWITCHING PROFILE

DESCRIPTION

This function is applicable to LGP dispensers. It provides hose pressurisation at the start of each transaction/delivery. Pressurisation is achieved by pulse width modulation flow for nine time period occurrences. Each of the nine default values below represent various pulse width in increasing order.

It is recommended that the default values be used in all instances.

RANGE

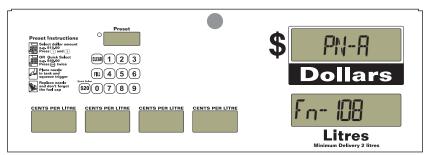
0 - 25

DEFAULT

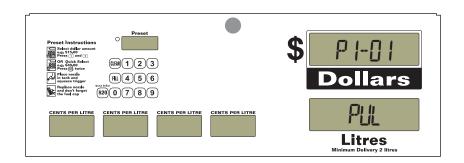
- P |-0 |
- P2-04
- P3-07
- P4- 10
- PS- 13
- PR-16
- P7-19
- PB-22
- P9-25



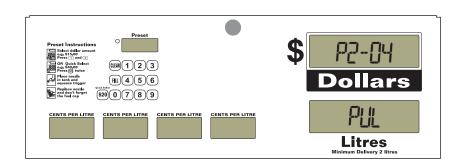




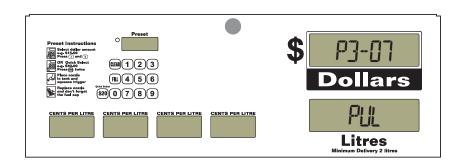
FILL)



FILL)



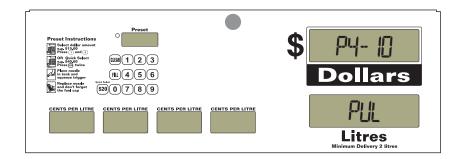
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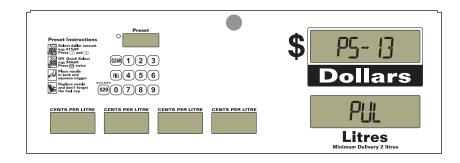




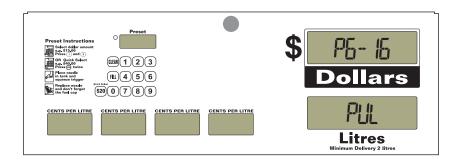




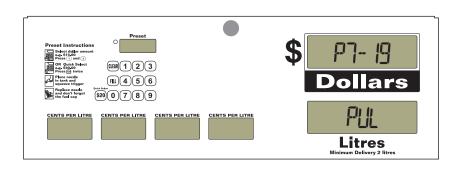




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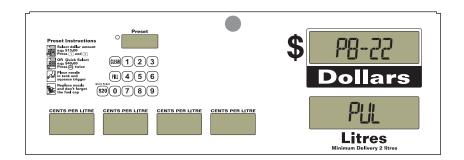
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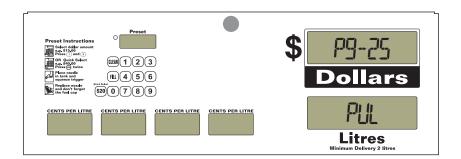
















FUNCTION TITLE BY FUNCTION NUMBER

- 1 DISPLAY THE LAST FATAL ERROR
- 2 DISPLAY ERROR LOG
- 3 COMMUNICATION TEST
- 4 TEMPORARY STANDALONE
- 5 NOT IN USE
- 6 DOES NOT EXIST
- 7 DISPLAY TEST
- 8 SOFTWARE VERSION
- 9 NOT IN USE
- 10 ERASE SETUP / ERASE ERROR LOG
- 11 NOT IN USE
- 12 GRADE PRIORITY MAPPING
- 13 PRESET OPTIONS DOLLARS OR LITRES
- 14 FLOAT SWITCH SETTING
- 15 NOZZLE FINALISATON
- 16 START UP DELAY
- 17 PRESET SHUTOFF TOLERANCE
- 18 VAPOUR RECOVERY
- 19 DOES NOT EXIST
- 20 SETTING THE PUMP NUMBER (FRONT)
- 21 SETTING THE PUMP NUMBER (REAR)
- 22 SETTING THE HOSES ACTIVE HOSE A1
- 23 SETTING THE HOSES ACTIVE HOSE B1
- 24 TEST DELIVERY SIDE A (FRONT) [HOSE 1]
- 25 TEST DELIVERY SIDE B (REAR) [HOSE 1]
- 26 READING ELECTRONIC TOTES (FRONT) [HOSE 1]
- 27 READING ELECTRONIC TOTES (REAR) [HOSE 1]
- 28 DOES NOT EXIST
- 29 SETTING ALLOCATION LIMITS STACK A
- 30 PUMP STACK TEST STACK A
- 31 SETTING PUMP PRICES STACK A
- 32 NOT IN USE
- 33 PRESET DELIVERY ALLOWED
- 34 DOES NOT EXIST
- 35 DOES NOT EXIST
- 36 NOT IN USE
- 37 VIEW UNCOMPENSATED DELIVERY VALUE (FDS FRONT)
- 38 VIEW UNCOMPENSATED DELIVERY VALUE (FDS REAR)
- 39 DOES NOT EXIST
- 40 DOES NOT EXIST
- 41 DOES NOT EXIST

- 42 SETTING THE HOSES ACTIVE HOSE A2
- 43 SETTING THE HOSES ACTIVE HOSE B2
- 44 TEST DELIVERY SIDE A (FRONT) [HOSE 2]
- 45 TEST DELIVERY SIDE B (REAR) [HOSE 2]
- 46 READING ELECTRONIC TOTES HOSE A2
- 47 READING ELECTRONIC TOTES HOSE B2
- 48 DOES NOT EXIST
- 49 SETTING ALLOCATION LIMITS STACK B
- 50 PUMP STACK TEST STACK B
- 51 SETTING PUMP PRICES STACK B
- 52 NOT IN USE
- 53 PRESET DELIVERY ALLOWED
- 54 DOES NOT EXIST
- 55 DOES NOT EXIST
- 56 DOES NOT EXIST
- 57 NOT IN USE
- 58 NOT IN USE
- 59 DOES NOT EXIST
- 60 DOES NOT EXIST
- 61 DOES NOT EXIST
- 62 SETTING THE HOSES ACTIVE HOSE A3
- 63 SETTING THE HOSES ACTIVE HOSE B3
- 64 TEST DELIVERY SIDE A (FRONT) [HOSE 3]
- 65 TEST DELIVERY SIDE B (REAR) [HOSE 3]
- 66 READING ELECTRONIC TOTES HOSE A3
- 67 READING ELECTRONIC TOTES HOSE B3
- 68 DOES NOT EXIST
- 69 SETTING ALLOCATION LIMITS STACK C
- 70 PUMP STACK TEST STACK C
- 71 SETTING PUMP PRICES STACK C
- 72 NOT IN USE
- 73 PRESET DELIVERY ALLOWED
- 74 DOES NOT EXIST
- 75 DOES NOT EXIST
- 76 DOES NOT EXIST
- 77 NOT IN USE
- 78 NOT IN USE
- 79 DOES NOT EXIST
- 80 DOES NOT EXIST
- 81 DOES NOT EXIST
- 82 SETTING THE HOSES ACTIVE HOSE A4
- 83 SETTING THE HOSES ACTIVE HOSE B4

- 84 TEST DELIVERY SIDE A (FRONT) [HOSE 4]
- 85 TEST DELIVERY SIDE B (REAR) [HOSE 4]
- 86 READING ELECTRONIC TOTES HOSE A4
- 87 READING ELECTRONIC TOTES HOSE B4
- 88 DOES NOT EXIST
- 89 SETTING ALLOCATION LIMITS STACK D
- 90 PUMP STACK TEST STACK D
- 91 SETTING PUMP PRICES STACK D
- 92 NOT IN USE
- 93 PRESET DELIVERY ALLOWED
- 94 DOES NOT EXIST
- 95 DOES NOT EXIST
- 96 DOES NOT EXIST
- 97 NOT IN USE
- 98 NOT IN USE
- 99 DOES NOT EXIST
- 100 SET CRUSH-UP TIME (REMOVED IN 2.64g ONWARDS)
- 101 SET OVER-SPEED TRIP (REMOVED IN 2.64g ONWARDS)
- 102 VAPOUR ALARM
- 103 DISPLAY PROBE TEMPERATURE
- 104 DISPLAY LPG CORRECTION FACTOR
- 105 DISPLAY LPG SPECIFIC GRAVITY
- 106 REPORT THE LAST SIX PROBE ALARMS
- 107 DISPLAY ENCODER CONSTANT
- 108 SET VALVE START UP SWITCHING PROFILE