# DairyTest Professional

# USER'S MANUAL

**English Edition**

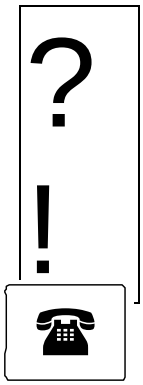
UK

InnovAg

Part No. DR51-0007-14a

# 2 – DairyTest Professional

## Thank you for purchasing DairyTest



**Problems or Suggestions**

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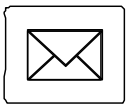
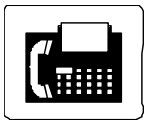
Australia (Toll Free) 1 800 061 167
03 9521 9383

### Write



InnovAg Pty. Ltd.
82 Victoria St., Sandringham
VIC 3191 Australia

### Fax



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### Internet (World Wide Web)

e-mail: innovag@cpdesign.com.au

http://www.cpdesign.com.au

# Quick Start.

How to Test Pulsators

**1. Set the how the results are calculated.**
Set units for Vacuum (kPa/inHg) and Pulsation ratios (%/ms) and the vacuum threshold used to calculate the D-phase time **DSEC** (2 or 4Kpa/0.5 or 1.1 inHg). Also decide how the difference between ratios of a 2 x 2 pulsator is displayed, Limping **LMP** or Balance **BAL** (*see* **Changing the Clock, Contrast, Units, Keybeep and Pulsation Settings**).

**2. Connect the hoses to the pulsator.**
From the Main Menu select Pulsation mode (**PULS**). The graph should appear on the screen and automatically updates every few seconds.

**3. Check the readings have settled.**
The port indicator (**P1** or **P2**) will be drawn in reverse (ie. **P1** or **P2**) if the pulsation is unstable (any value is more than 5% different from the average). Wait until the port indicator is drawn normally before saving or printing the readings. If the reverse does not clear it is likely that the pulsator has a problem.

**4. Select what is shown on the screen.**
The current port is the solid line on the graph and its readings are on the right side of the screen. Press the **P1** (or **P2**) button to view the other port (*see* **Swapping between Port 1 and Port 2**). Alternatively you can change to DIGITAL display by pressing the **8.88** button (*see* **Swapping between GRAPHIC and DIGITAL displays**). DIGITAL shows all readings at once with one in large digits, useful if you are adjusting a pulsator.

**5. Increasing the graph time.**
The graph can be recorded over 1.5 or 3.0 seconds. Press **SEC** to change the scale (*see* **Changing the Timebase**). Changing the scale does not alter the sample rate or accuracy of the readings. The scale cannot be changed on a saved graph.

**6. Printing the results.**
Press the key. In Quick Mode what is on the screen is printed. In Expert Mode you can select the print format.

**7. Using the Alarms (*Expert mode only*).**
Readings not within preset limits can be automatically highlighted eg. **B%=21.3**. There is a default set of alarms and individual settings are stored for each farm (*see* **Farms**). Turn alarms ON/OFF by pressing . Hold the key down to see the current settings.

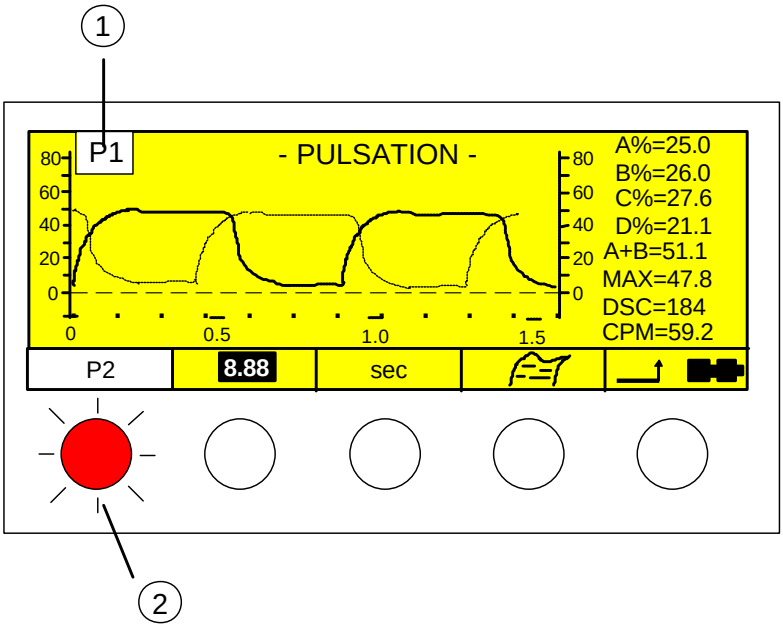
**8. Saving the readings (*Expert mode only*).**
Press **MEM** to enter Memory mode (*see* **Memories**). The current Stall is shown in the title. The symbol means the memory is already used. Updating continues while in Memory mode. Press **M+** to save the readings. Data and graphs for both ports are stored in one memory. Use the arrow keys to move to the next Stall, or if Auto Increment is ON the number will move forward after each save (*see* **Changing the Clock, Contrast, Units, Keybeep and Pulsation Settings**). All saved readings can be printed later (see **Printing from Memory**). Press **MR** to view the memory.

# 4 – DairyTest Professional
# Contents

# 6 – DairyTest Professional

## Using the Manual

The Following conventions are used throughout this manual to explain DairyTest operation:

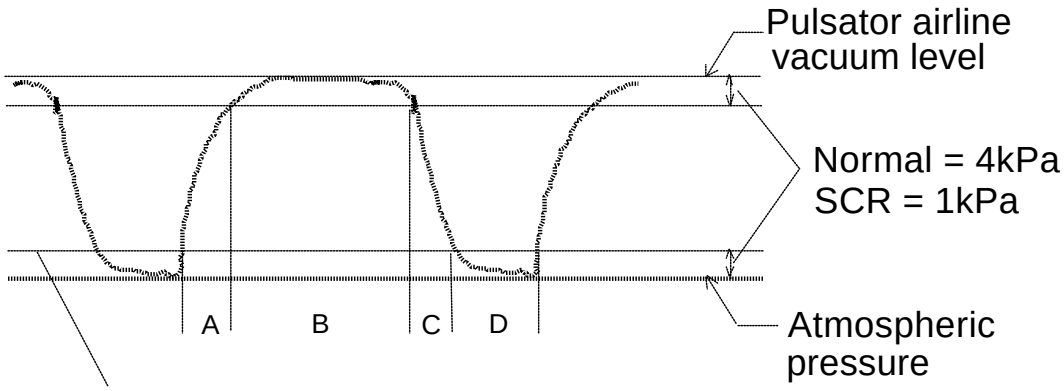



(1) A highlighted area means that item will change when the action is taken. Watch that space as you press the next button.

(2) A button shown like this should be pressed to perform the action being described.

## Abbreviations and Definitions

A+B - Basic Pulsator Ratio (A% + B%).
CPM - Cycles Per Minute or Pulsator Rate.
DSC - Time on atmospheric pressure (D time).
LMP - Limping. Difference between BPR of the two ports.
BAL - Balance. Difference between B phases of the two ports.
SCR - Spit Chamber Releaser.




Dtime threshold 2 or 4kPa (0.5 or 1.1 inHg)

A% - Increasing vacuum phase.
B% - Maximum vacuum phase.
C% - Decreasing vacuum phase.
D% - Minimum vacuum phase.

i.e.

$$A\% = \frac{A}{(A+B+C+D)} \times 100$$

Expressed as a percentage of total cycle time or milliseconds. See 'Setup – Changing the Clock, Contrast, Units keybeep and Pulsation Settings' for information on how to change the settings.

## DairyTest Features

The display has three distinct information areas: **Menu**, **Title** and **Screen**.

The **Title** tells you where you are within the DairyTest menu structure.
The **Menu** shows you what function each button will perform.
The **Screen** displays the information selected.

The four yellow buttons select a new menu level or display function.

The red button has three uses:-

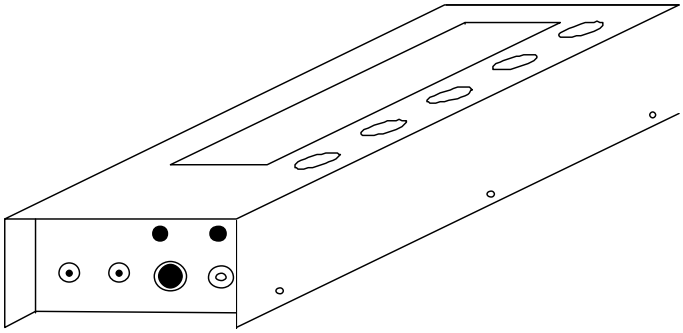
(i) Turns the power on,

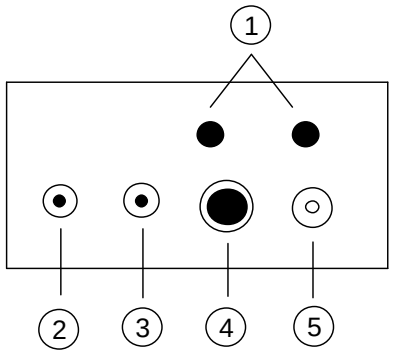
(ii) Cancels the current function and/or returns to the previous menu level,

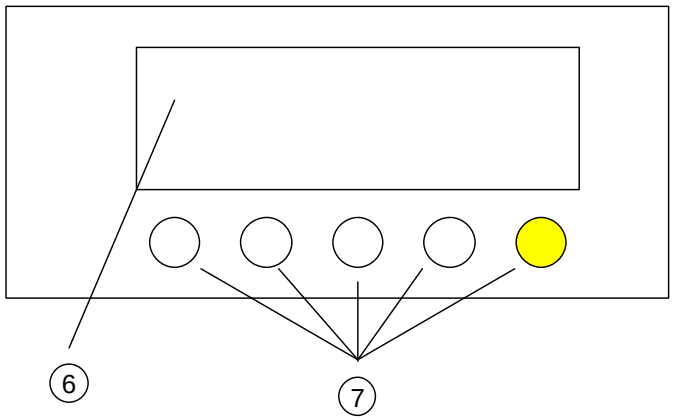
(iii) Turns the power off (only when the Main menu is displayed).

**Keep an eye on the Title - it can help you locate where you are in the menu structure.**

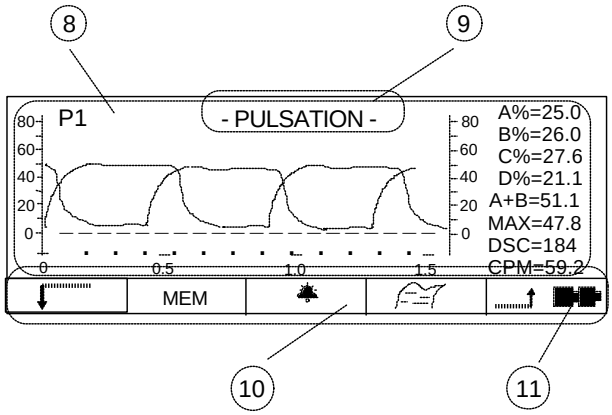
1. Tachometer Sensors.
2. Port 1.
3. Port 2.
4. Printer/PC link/Auxiliary.
5. Charger.
6. Display.
7. Buttons.
8. Screen.
9. Title.
10. Menu.
11. Battery Status.





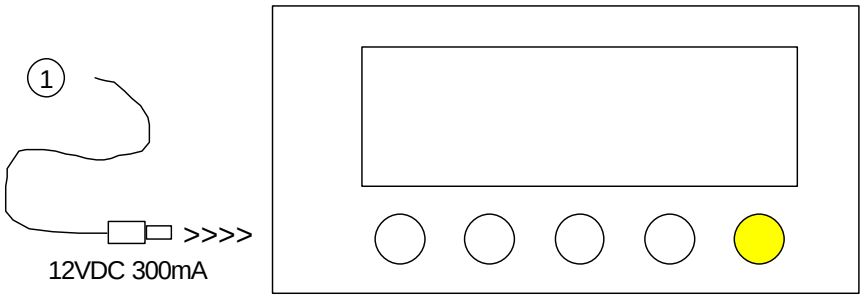



# 8 – DairyTest Professional



## Using the Charger

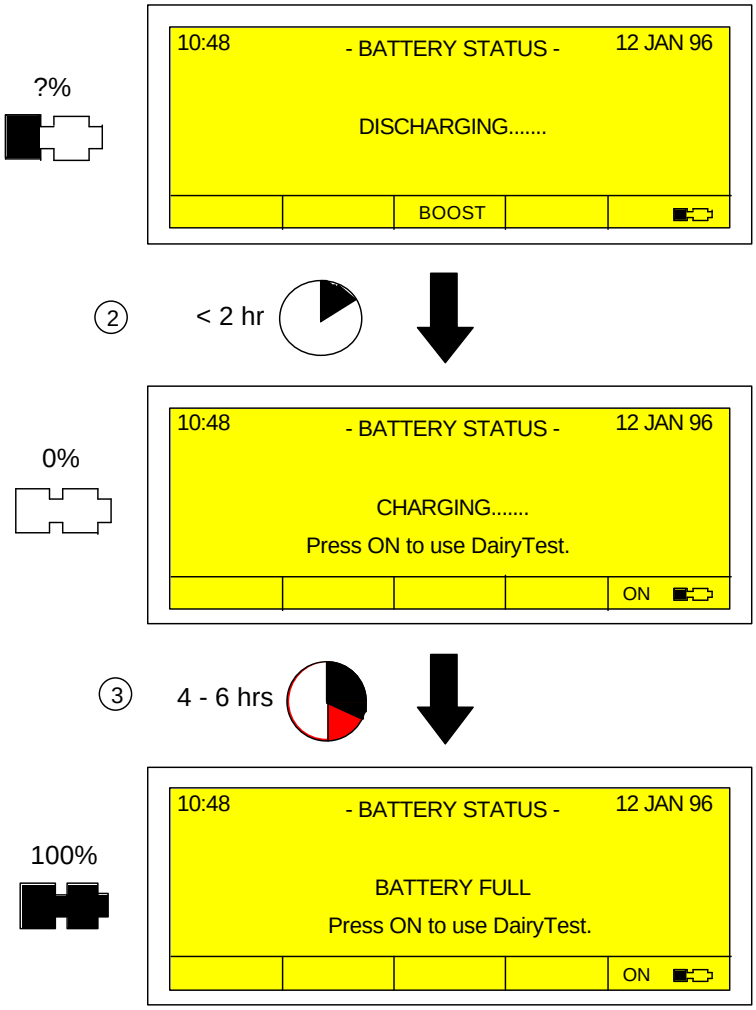
Before starting to charge, DairyTest fully discharges the battery (by turning on the internal servo valve) to ensure maximum operating time. Discharging can be over-ridden (to top-up DairyTest to finish a shed for instance) by pressing the 'BOOST' button. Note that DairyTest cannot take measurements whilst the batteries are being discharged. The 'BOOST' function ***should only be used*** for a quick, short-term charge to complete your measurements. Regular use of the 'BOOST' function will cause early battery failure.




1. Car or Mains Charger.
2. Discharging takes up to 2 hours.
3. Charging takes between 4 and 6 hours.

The charger switches to trickle charge when 'BATTERY FULL' is displayed and can be left indefinitely without damage.

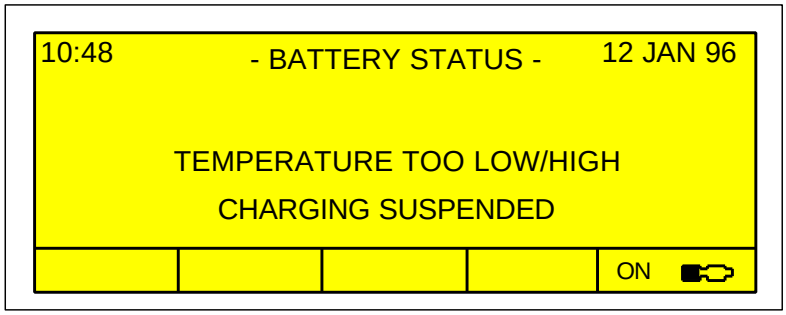
**Note**: The battery symbol in the lower right hand corner of the display gives an **indication** only. DairyTest will warn you when the batteries are getting low, ultimately shutting-down to protect the memories. DairyTest can be used for about 30 minutes after the Low-Battery warning first appears.



# 10 – DairyTest Professional

## Using the Charger (cont.)

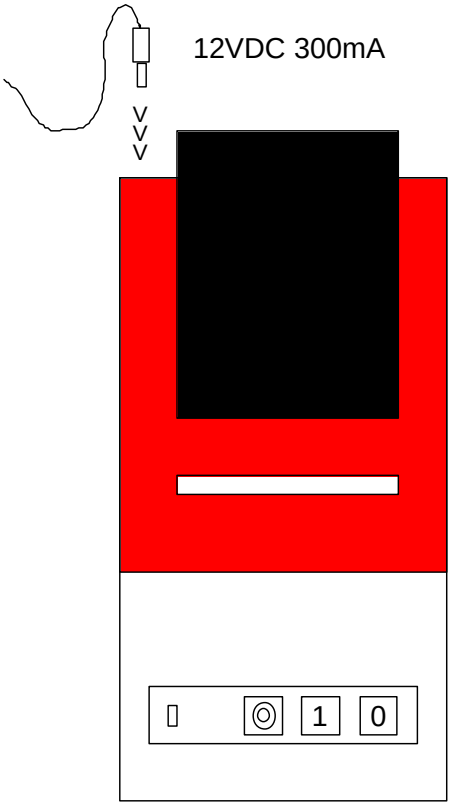
If this screen appears during charging, the temperature inside DairyTest is too hot (above 40°C) or too cold (below 5°C) to continue with the charge cycle. DairyTest will automatically recommence charging when the temperature returns to an acceptable level. To prevent DairyTest from suspending the charging cycle, keep it out of the sun on hot days, and out of the fridge on cold ones!!

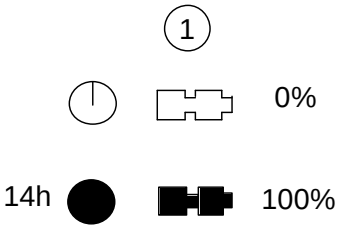


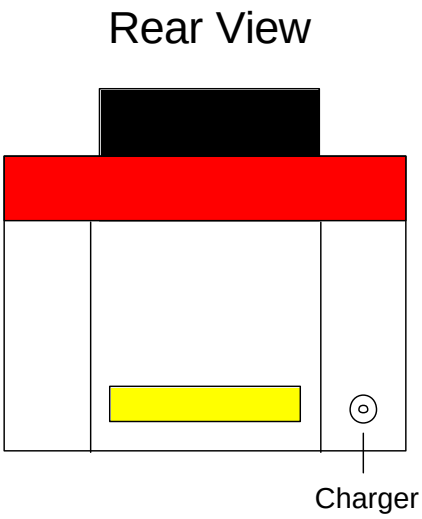

## Charging the Printer

The Printer is charged using the same plugpack as for DairyTest. Note that the printer does **not** have a low-battery indicator.

① Charging takes between 12 and 14 hours.



## Quick Mode

Quick

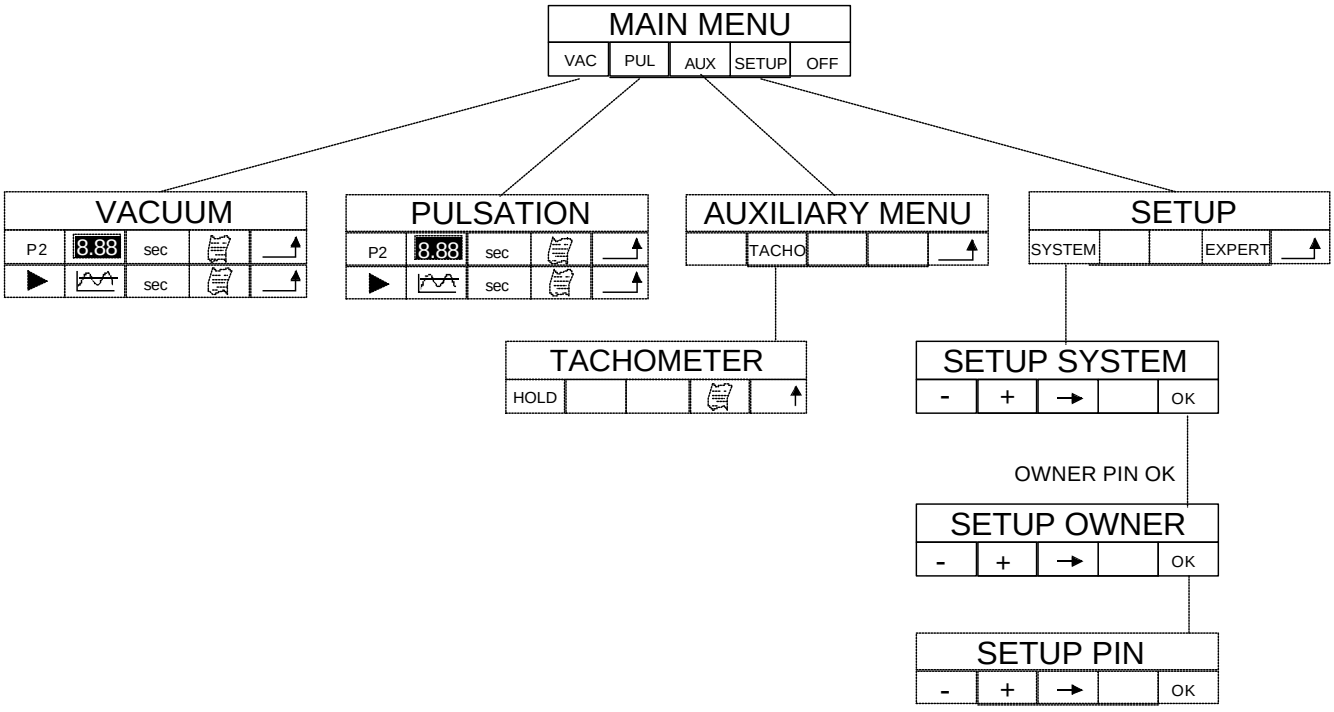
Quick mode offers most of the on-screen features without the advanced facilities of Expert mode. We recommend that new users start with Quick mode to become familiar with DairyTest. Quick mode is also useful if a less experienced tester is using your meter, as it prevents access to and therefore accidental loss of your memories and farm database.

This diagram shows the menu structure of DairyTest when set to Quick mode. It can help you navigate your way around Quick mode functions.

## Quick Mode Vs Expert Mode

The table at right outlines the functions available for each operating mode.

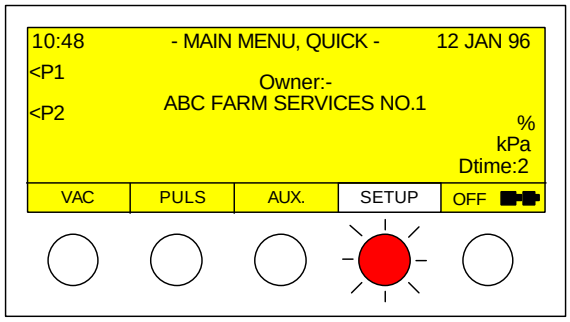
| | QUICK | EXPERT |
|---|---|---|
| Graphic Display | ● | ● |
| Digital Display | ● | ● |
| Print Screen | ● | ● |
| SCR Thresholds | | ● |
| Farm Names | | ● |
| Alarms | | ● |
| Memories | | ● |
| Print from Memory | | ● |
| Vacuum Recorder | | ● |
| Tachometer | ● | ● |



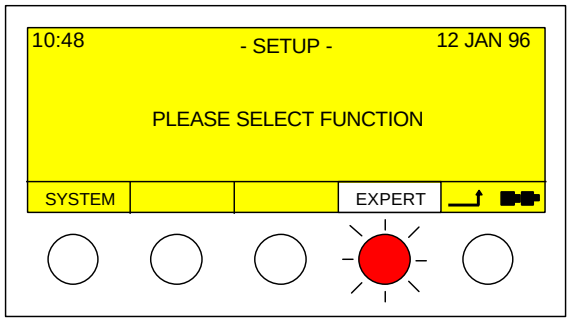
# Changing from Quick to Expert mode

Quick ➡ Expert

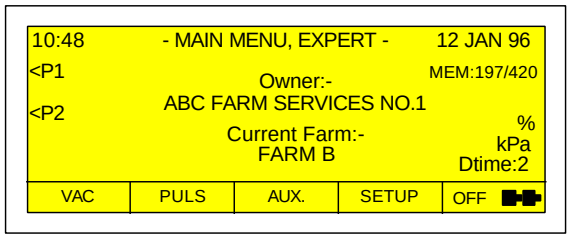
Select Setup menu.




Select Expert mode.




Expert mode Main menu.




The Main menu title shows the currently selected mode.

Note: Changing to Quick mode does not effect memory contents.

# 14 – DairyTest Professional

## Swapping between Graphic and Digital displays

Quick

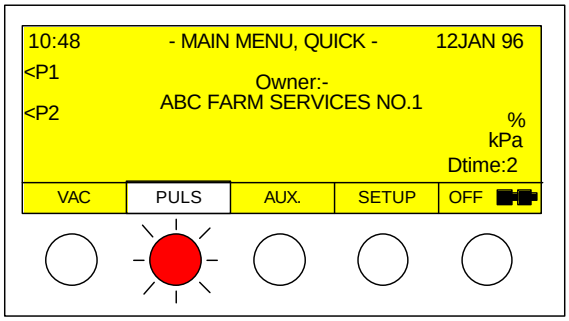
Pulsation
Vacuum

DairyTest has two basic methods of displaying the recorded information - Graphic and Digital. In Quick mode they are selected directly from the menu in each (Pulsation or Vacuum) mode. The vacuum readings can be displayed as a graph with data on the right hand side, or as data only with one selected item in large, easy to read digits. The latter is useful when making adjustments from a distance or when you are only interested in one particular measurement.

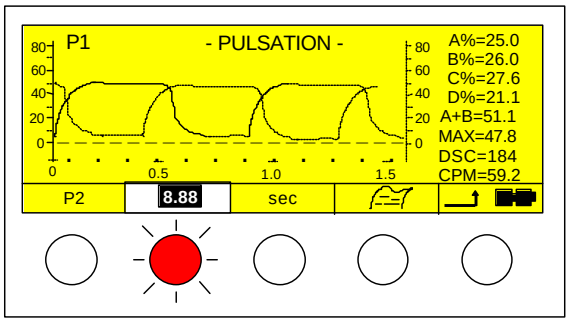
In Vacuum mode both displays show all readings for both ports whereas the Pulsation mode shows current-port data only in Graphic display, and all data in the Digital display. If you need to see all pulsation data at one time, use the Digital display.

From the Main menu select the mode (Vacuum or Pulsation) you want to work with. The display type (Digital or Graphic) will be the same as that when last in the mode selected.

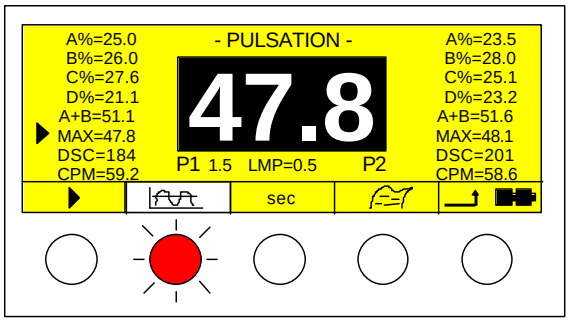
Note: Changing to Graphic or Digital display in Vacuum mode does not affect Pulsation mode, and vice-versa.



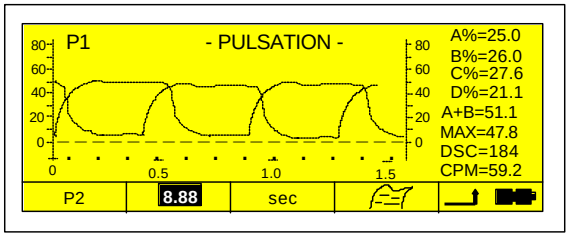

GRAPHIC




DIGITAL




GRAPHIC

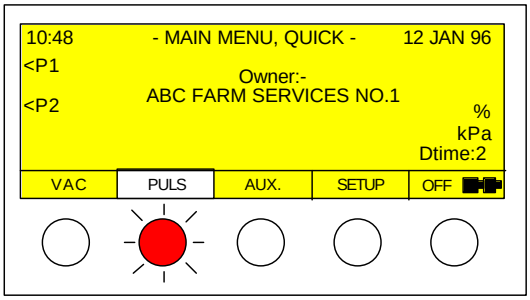


# Changing Timebase

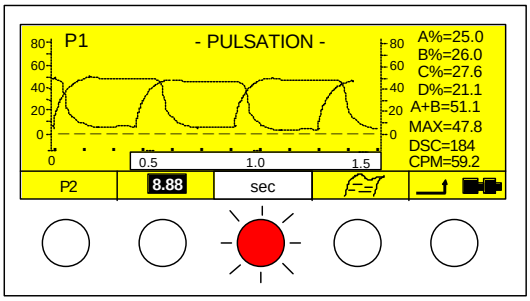
The timebase sets the amount of time shown on the graph, ***not*** the sample rate. Vacuum mode has 5 timebase settings: 1.5s, 3.0s, 15s (0:15), 30s (0:30) and 1.5m (1:30); Pulsation mode has two: 1.5s and 3.0s.

From the Main menu select the mode (Vacuum or Pulsation) you want to work with. The timebase will be the same as that when last in the mode selected.

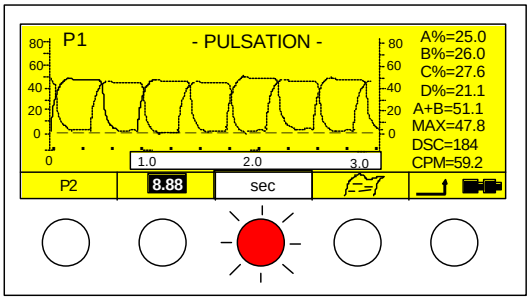
Note: Changing the timebase in Vacuum mode does not affect Pulsation mode, and vice-versa.



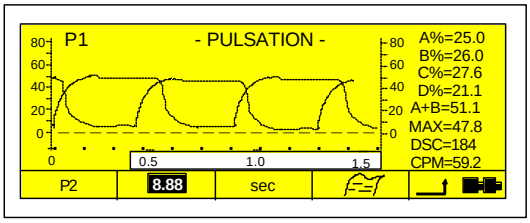

1.5 sec



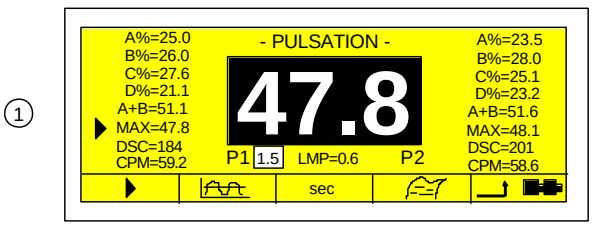

3.0 sec




1.5 sec



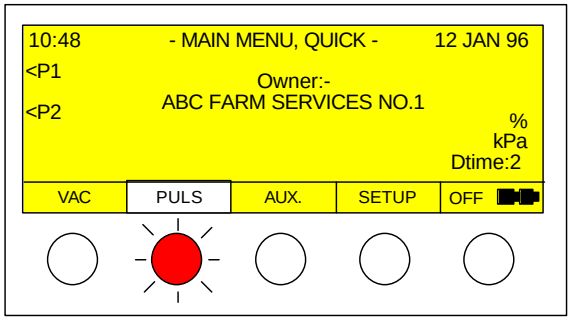

① Timebase indication in Digital display.

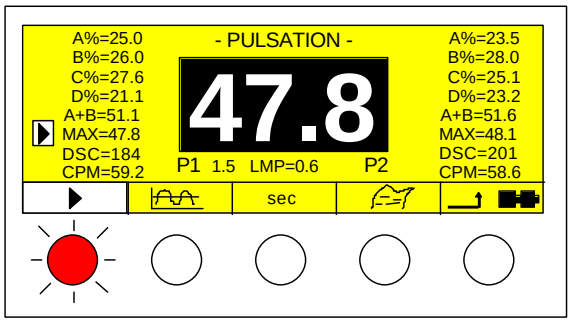


# Changing the large Digital Display item

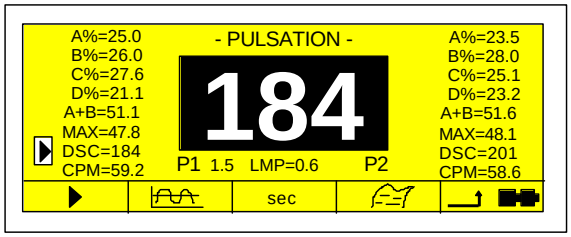
Any of the displayed readings can be viewed as large numbers for long-distance visibility.

From the Main menu select the mode you want to work with. The large display item will be the same as that when last in the mode selected.




The pointer ▶ indicates the item which is enlarged.




Note: Changing the large display item in Vacuum mode does not affect Pulsation mode, and vice-versa.

# 18 – DairyTest Professional

## Swapping between Port 1 and Port 2

Quick

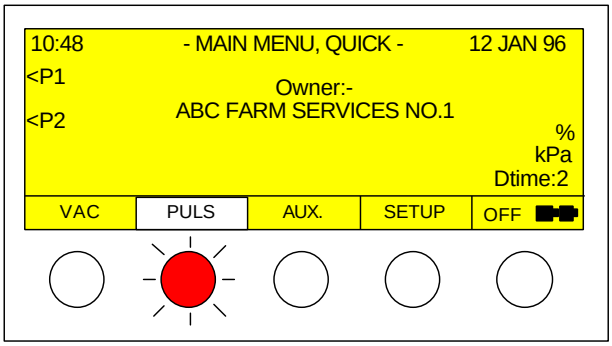
**Graphic Pulsation**
**Graphic Vacuum**

For Graphic display type only. From the Main menu select the mode (Vacuum or Pulsation) you want to work with. The current Port will be the same as that when last in the mode selected.

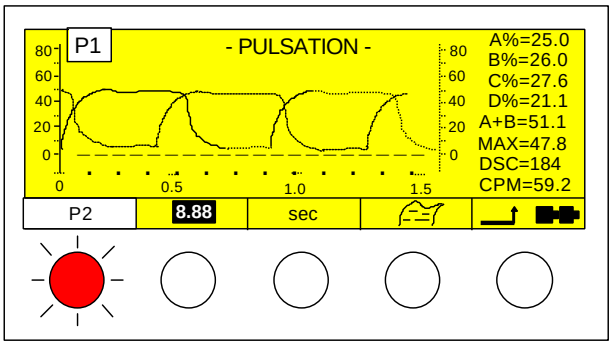
The current Port is shown on the graph as a solid line. The non-current port is dotted.

In Pulsation mode, only the current port's data is displayed.

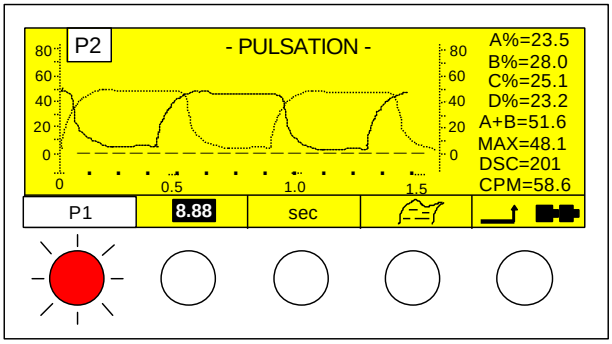
Note: Changing the current Port in Vacuum mode does not affect Pulsation mode, and vice-versa.



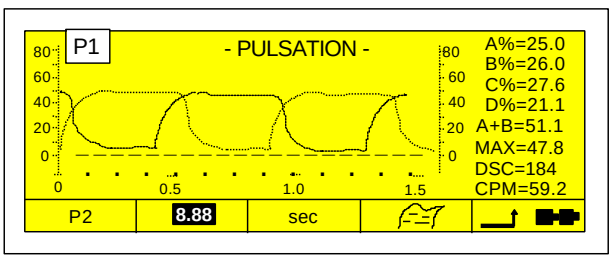

PORT 1




PORT 2



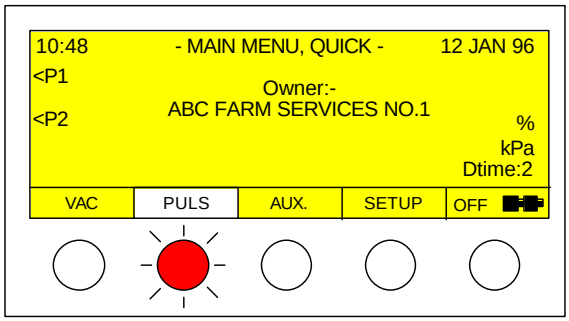

PORT 1

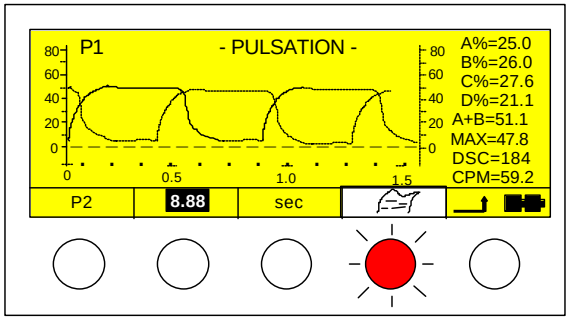


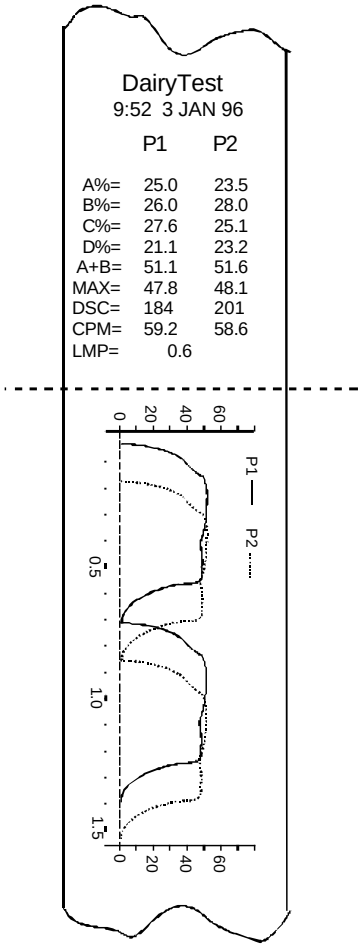
# Printing a screen

Quick

**Pulsation**
**Vacuum**



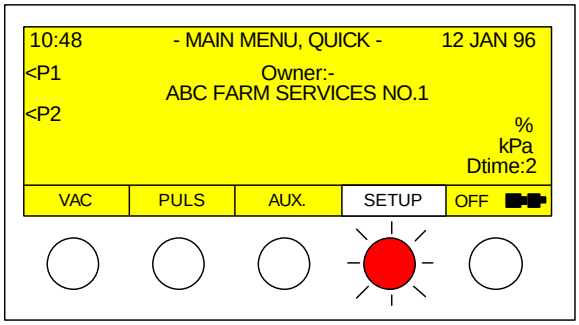

If display type is graphic, a graph will be printed along with the data. In Digital display mode, only data will be printed.

# 20 – DairyTest Professional

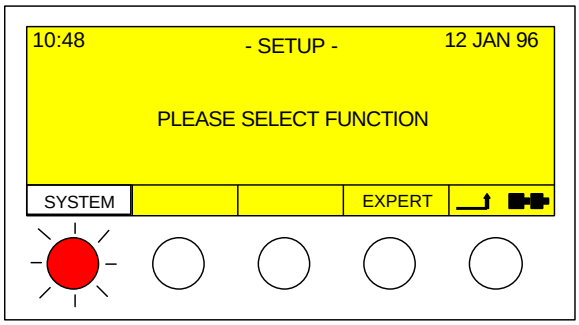
## Changing the Clock, Contrast, Units, Keybeep and Pulsation Settings

Quick Setup

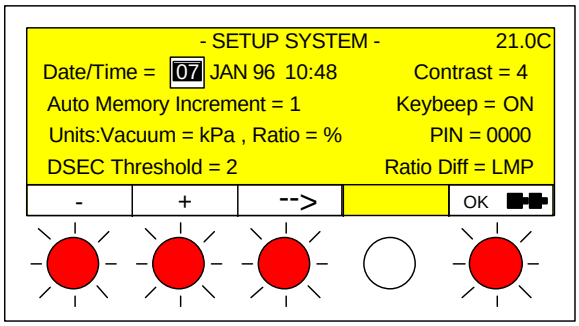
DairyTest has several settings that control the way the meter operates. In general these do not need to be changed often.




Select Setup menu.

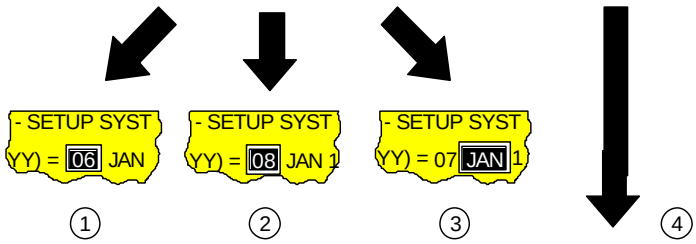



Select System menu.

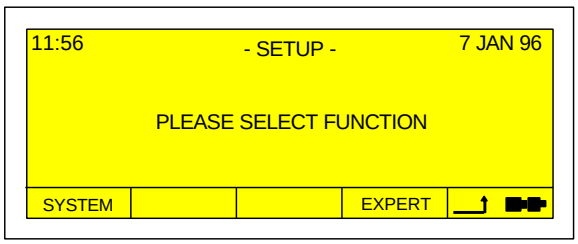



For more information on all settings, see 'What the settings mean' in the next section.

1. Decrement setting.
2. Increment setting.
3. Move cursor to next item.
4. Accept changes.




If you miss a setting, or make a mistake, push the → button until the cursor returns to the item you want to change.



## What the Settings mean



**Date/Time**: Sets the DairyTest internal clock. Use 00 for 2000.

**Contrast**: Controls the difference between light and dark parts of the display. Darkest = 15.

**Auto Memory Increment**: Allows the pulsation memory to move forward automatically after each save.

0 = No increment.

1 = Increment by one, the Stall will move 1A, 1B, 2A, 2B…….

2 = Increment by two, the Stall will move forward 1A, 2A, 3A……

**Keybeep**: Sets if a beep is heard each time a key is pressed.

**Units**: Allows the DairyTest to display in different measurement units. Vacuum as inHg or kPa; pulsation ratios as a percentage of the total cycle (%) or actual milliseconds (ms).

**PIN**: Used to change the PIN and Owner Name. See the next section for more detail.

**DSEC Threshold**: Used to set the vacuum level that Pulsation mode uses to calculate DSEC. Can be set to either 2kPa (0.5inHg) or 4 kPa (1.1inHg), the same as that used for ratio calculation.

**Ratio Difference**: Sets which Ratio Difference value is shown on the screen in Pulsation mode. Normally set to Limping (LMP) which is the difference between the A+B (BPR) of Port 1 and Port 2. The Balance option (BAL) is the difference between the B phases only, and can be useful to quickly highlight a problem in the A phase of one port where the A+B value may be correct.

# 22 – DairyTest Professional

## Changing the Owner name and PIN

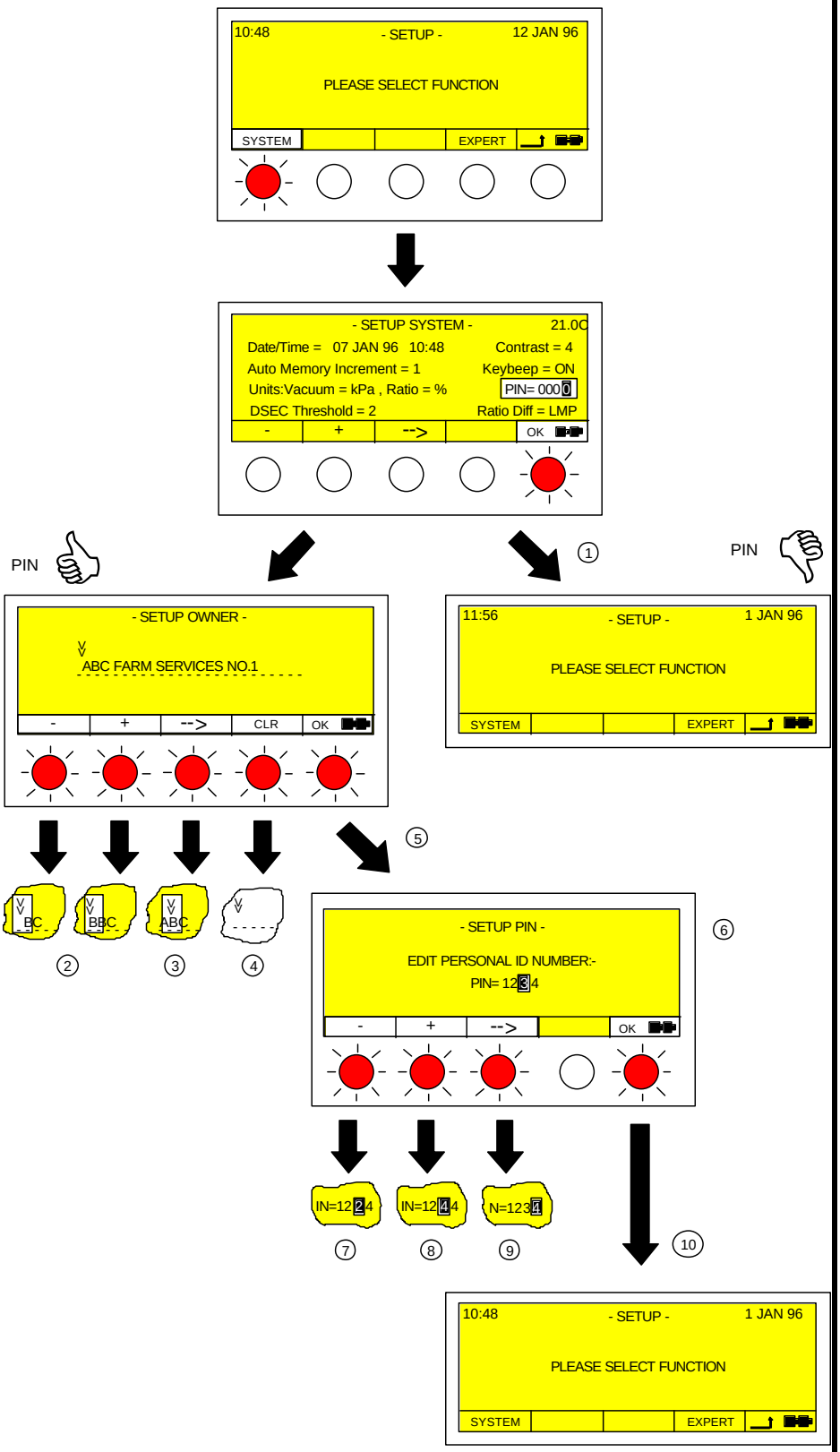
Quick

**Setup**

The PIN is factory set to 0000 and can be changed after the owner name is entered. We strongly recommend that you enter your own or company's name when the meter is purchased so that it can be identified if lost or misplaced. The Owner name is also used in Expert mode for display in the Main menu and at the top of Farm printouts.

Enter Setup screen by selecting SETUP from the Main menu then select SYSTEM.

The cursor must be in the PIN number field with correct PIN number entered. See note below.




1. Returns to Setup menu if PIN does not match.
2. Move through character set.
3. Move cursor to next location.
4. Clear entire name.
5. Accept changes.
6. To leave PIN unchanged, just press OK.
7. Decrement number.
8. Increment number.
9. Move cursor to next location.
10. Accept changes.

Character set shown at left.

ABCDEFGHIJKLMNOPQRTSUVWXYZ&'()*+,-./0123456789

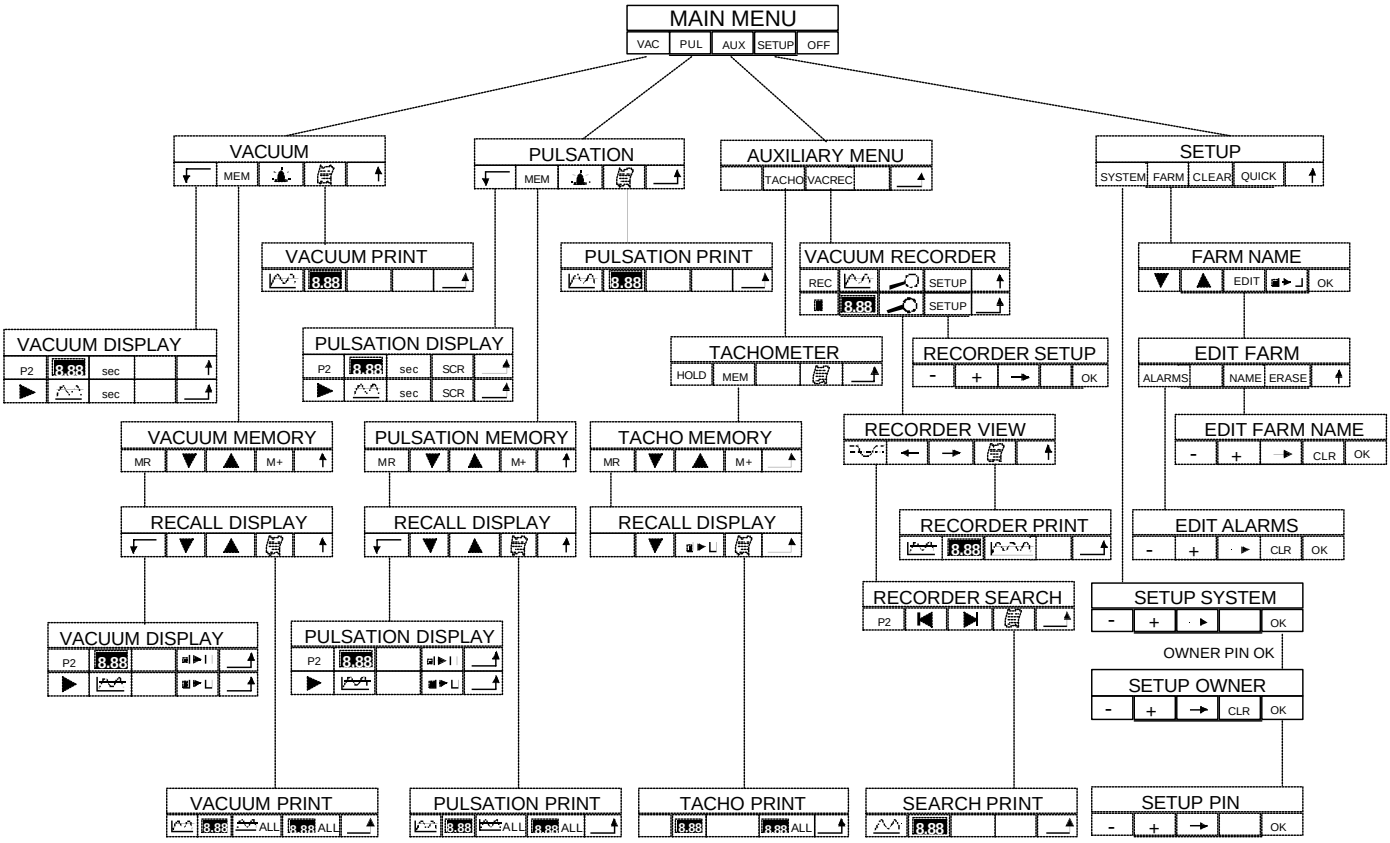
## Expert Mode

Expert mode offers full access to all DairyTest features. As a result, some of the functions require additional button presses compared to their Quick mode equivalents. (For example, the Print button pulls up another menu to select print options whereas the quick mode version just prints the current screen).

Although Expert mode may initially seem more complex, often used functions are quickly accessed and most users become familiar with the enhanced operation in a short time. If unsure, we suggest using Quick mode for a while before swapping to Expert mode.

This diagram shows the menu structure of DairyTest when set to Expert mode. It can help you navigate your way around Expert mode functions.

Expert



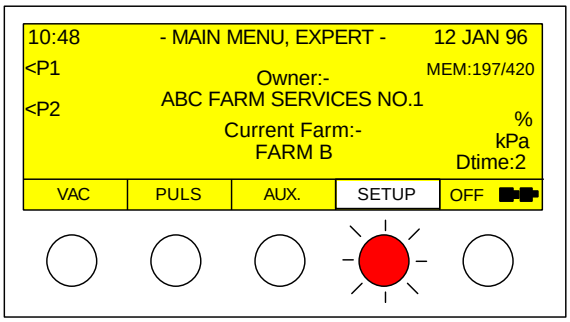
# 24 – DairyTest Professional

## Changing from Expert to Quick mode

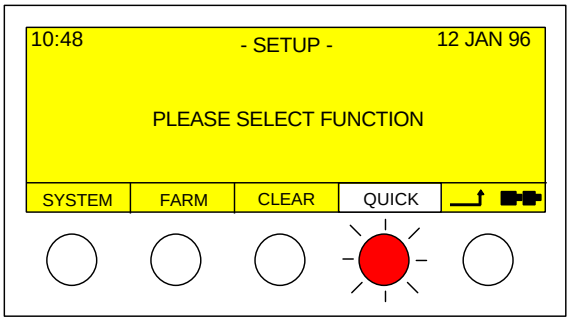
Expert ➡ Quick

Main menu in Expert mode shows total number of memories used, plus the current farm.

Select Setup menu.

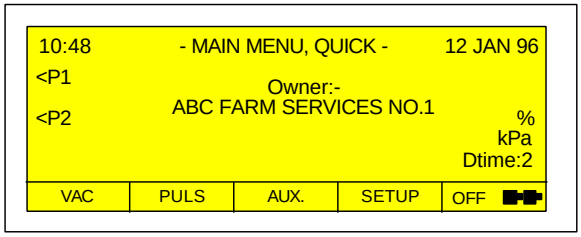



Select Quick mode.




Quick mode Main menu.

The Main menu title shows the currently selected mode.




Note: Changing to Quick mode does not effect memory contents.

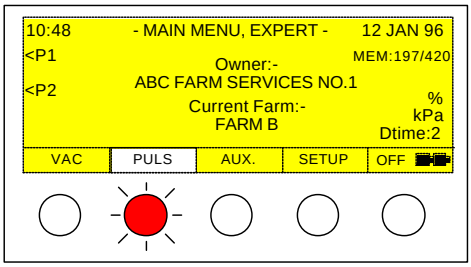
# Swapping between Graphic and Digital displays

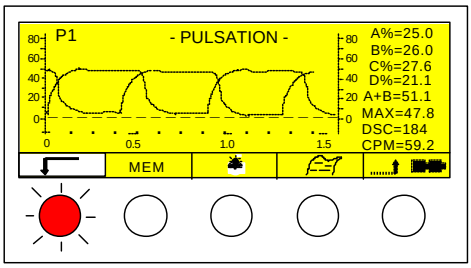
Expert

**Pulsation**
**Vacuum**
**Pulsation Recall**
**Vacuum Recall**

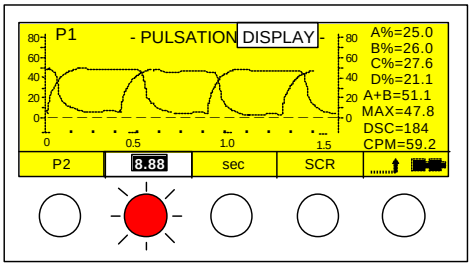
Features which affect the way information is shown on the screen are grouped under a Display menu (except for some Pulsation display settings; these can be found under ‘Changing the Clock, Contrast, Units, Keybeep and Pulsation Settings’). These are generally left set to suit personal preference or changed to highlight a particular problem.

From the Main menu select the mode (Vacuum or Pulsation) you want to work with. The display type (Digital or Graphic) will be the same as that when last in the mode selected.

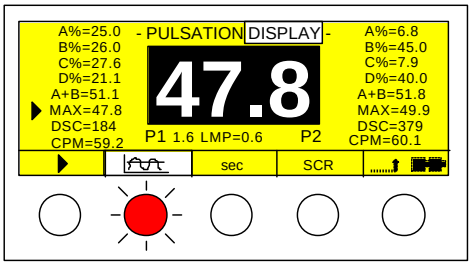


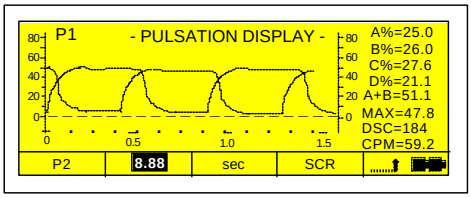

GRAPHIC




DIGITAL




GRAPHIC




Select the Display menu.

Screen readings continue to update whilst in the Display menu. Press ↵ to return to the previous menu.

Note: Changing to Graphic or Digital display in Vacuum mode does not affect Pulsation mode, and vice-versa.

# 26 – DairyTest Professional

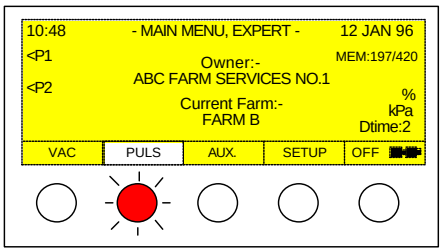
## Changing Timebase

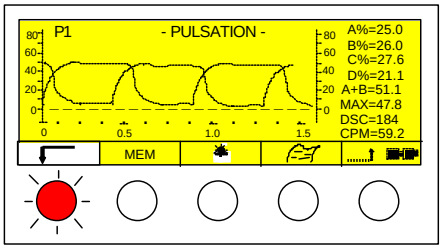
Expert

**Pulsation**
**Vacuum**

The timebase sets the amount of time shown on the graph, ***not*** the sample rate. Vacuum Mode has 5 timebase settings : 1.5s, 3.0s, 15s (0:15), 30s (0:30), and 3m (3:00), Pulsation Mode 2 : 1.5s and 3.0s.

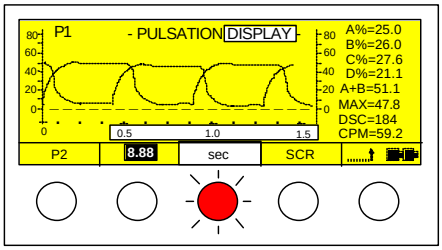
From the Main menu select the mode (Vacuum or Pulsation) you want to work with. The timebase will be the same as that when last in the mode selected.



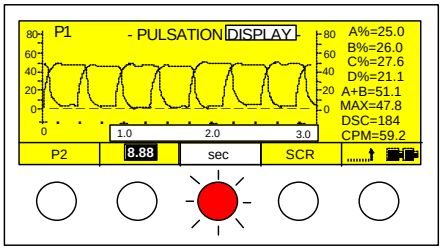

Select the Display menu.

1.5 sec



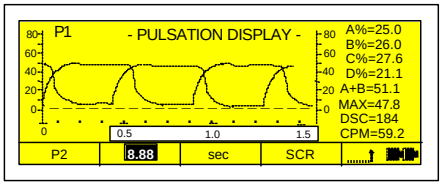

Screen readings continue to update whilst in the Display menu. Press ↵ to return to the previous menu.

3.0 sec

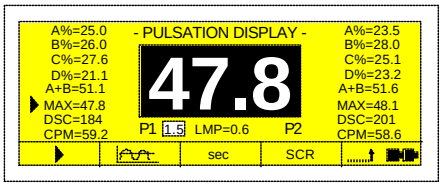



Note: Changing the timebase in Vacuum mode does not affect Pulsation mode, and vice-versa.

1.5 sec




① Timebase indication in Digital display.



Expert

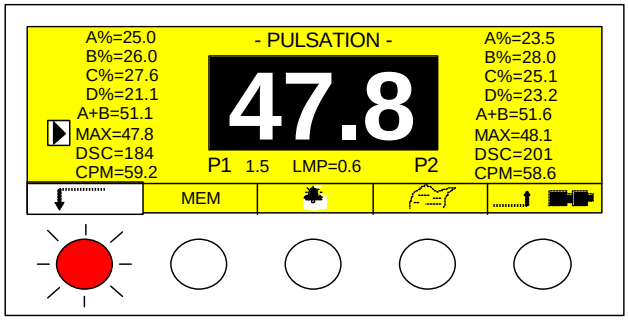
**Digital Pulsation**
**Digital Vacuum**
**Digital Pulsation Recall**
**Digital Vacuum Recall**

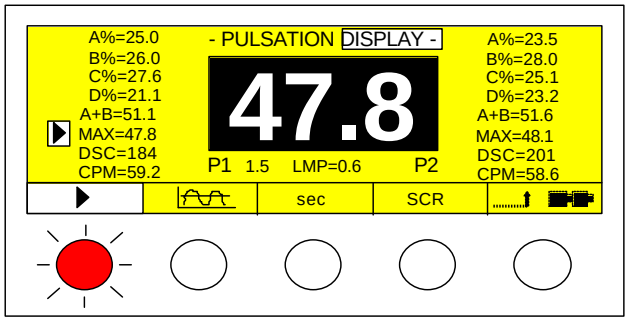
# Changing the large Digital Display item

Any of the displayed readings can be viewed as large numbers for long-distance visibility.

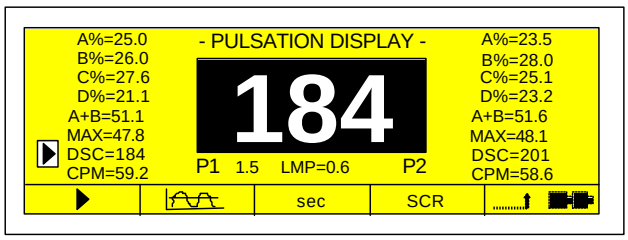
From the Main menu select the mode (Vacuum or Pulsation) you want to work with. The large display item will be the same as that when last in the mode selected.

Select the Display menu.




The pointer ▶ indicates which item is enlarged.




Screen readings continue to update whilst in the Display menu. Press ↵ to return to the previous menu.

Note: Changing the large Display item in Vacuum mode does not affect Pulsation mode, and vice-versa.

# 28 – DairyTest Professional

## Swapping between Port 1 and Port 2

For Graphic display type only. From the Main menu select the mode (Vacuum or Pulsation) you want to work with. The current Port will be the same as that when last in the mode selected.

Select Display menu.

The Current Port is shown on the graph as a solid line. The non-current port is dotted.

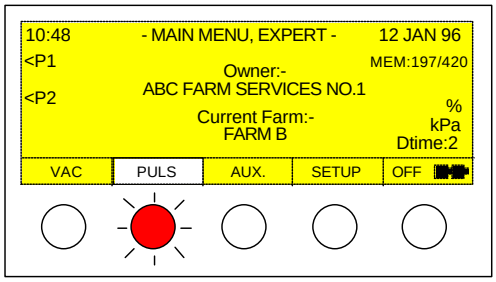
In Pulsation mode, only the current port's data is displayed.

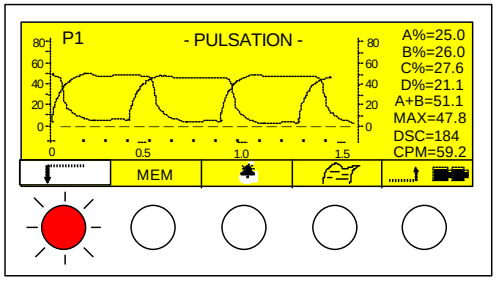
Screen readings continue to update whilst in the Display menu. Press ↵ to return to the previous menu.

Note: Changing the current Port in Vacuum mode does not affect Pulsation mode, and vice-versa.

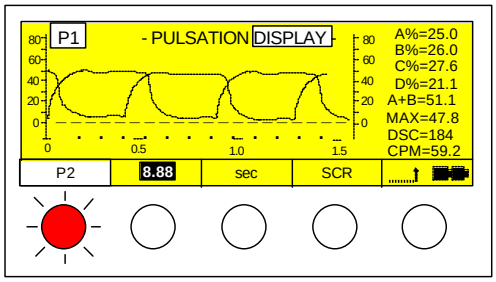
Expert

**Graphic Pulsation**
**Graphic Vacuum**
**Graphic Pulsation Recall**
**Graphic Vacuum Recall**

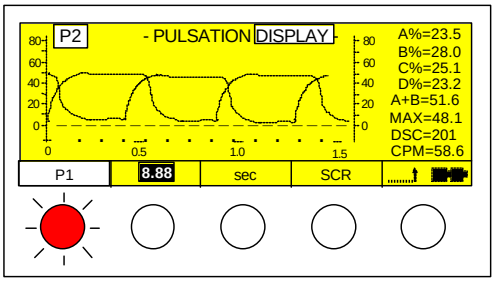


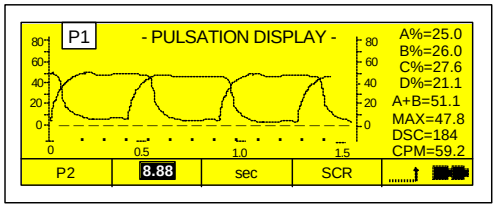

PORT 1




PORT 2




PORT 1



# 30 – DairyTest Professional

## Selecting the Threshold Value

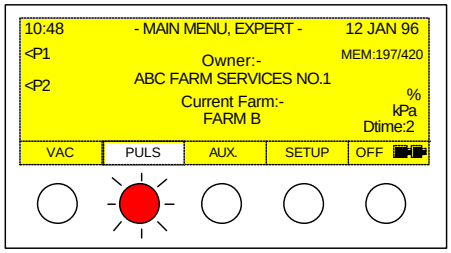
Expert

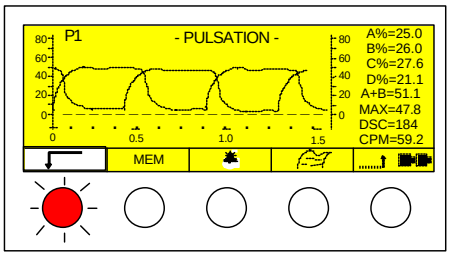
**Pulsation**

The Threshold used for calculating the ratios (A%, B%, etc.) is normally 4kPa above 0kPa and 4kPa below maximum vacuum. When testing a Spit Chamber Releaser, the thresholds can be reduced to 1kPa and maximum vacuum for correct testing of these devices.

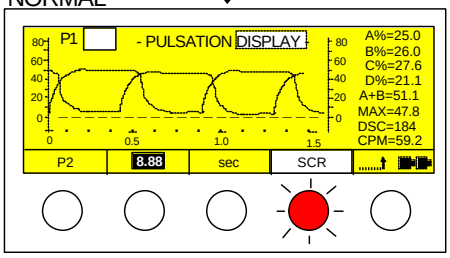
To prevent unintended SCR selection, DairyTest will ask you to confirm this setting. SCR mode will be cleared when pulsation mode is exited.

The DSEC threshold can also be altered; see 'Changing the Clock, Contrast, Units, Keybeep and Pulsation Settings' for more information.



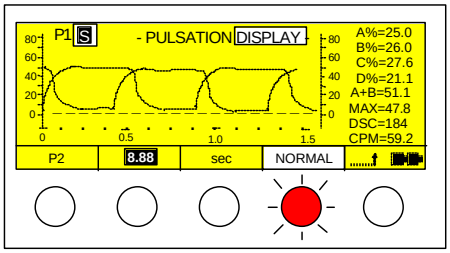

NORMAL



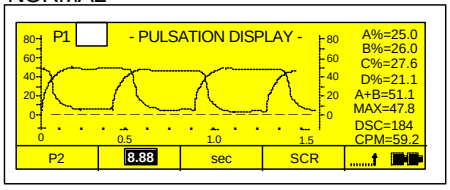

Select the Display menu.

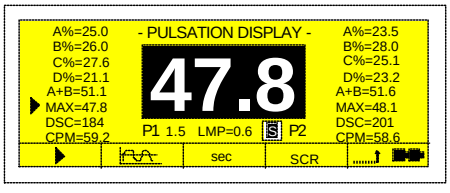
Screen readings continue to update whilst in the Display menu. Press ↵ to return to the previous menu.

SCR




NORMAL



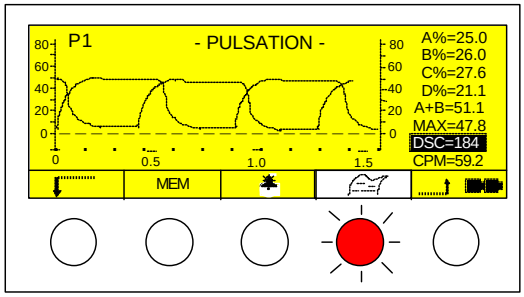

① SCR Threshold indication in Digital display.

# Printing a screen

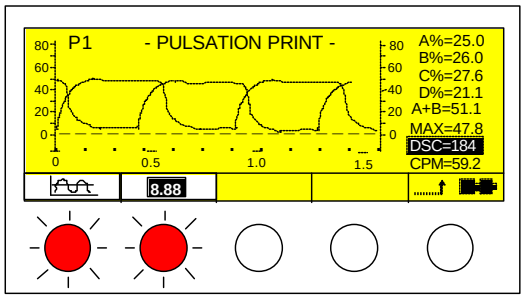
Expert

**Pulsation**
**Vacuum**

In Expert mode, DairyTest can print the current screen, a single memory or an entire Farm. Only current-screen printing is explained here - see the 'Memory' section for information on printing single or Farm memories.

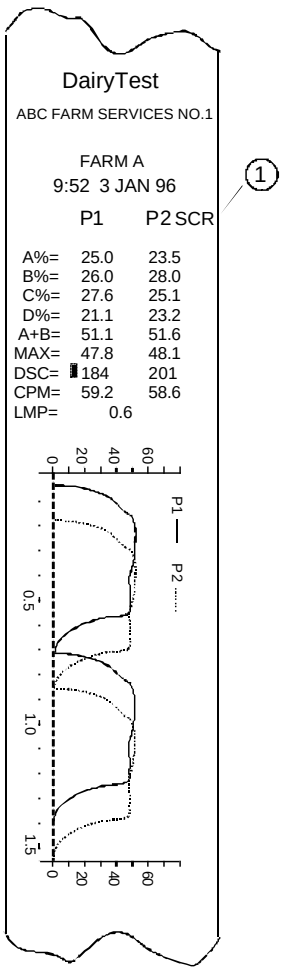


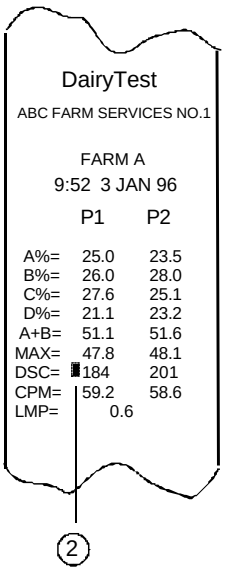

Select the Print menu.




1. SCR mode indicated here.
2. Readings in alarm have a block placed on the left hand side.

Graph and Data




Data only

# 32 – DairyTest Professional

## Farms

Expert

In typical use, DairyTest would test many farms on a regular basis. Each dairy would have its own particular pulsation and vacuum settings to suit the type of dairy and milking equipment installed.

Using DairyTest is similar to the way farms are tested. By entering the name of each farm into the “Farm Directory”, stall readings can be easily recalled on a farm by farm basis. Individual alarm settings are stored for each Farm, so the settings are entered only once then recalled automatically when the Farm is selected.

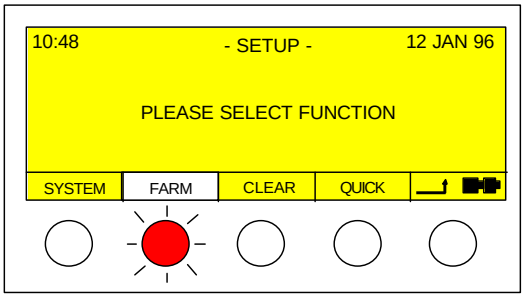
By storing stall data under a Farm name, the entire Farm can be printed in a single operation with the Farm name and Owner/Company name at the top of each print.

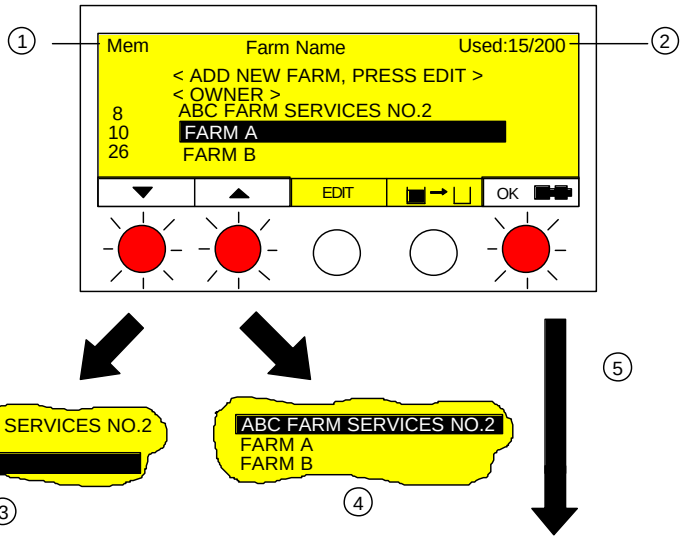
Note that the default Farm has the owner name entered under the (SETUP) ”SYSTEM” screen.

This section deals with the management of Farms.

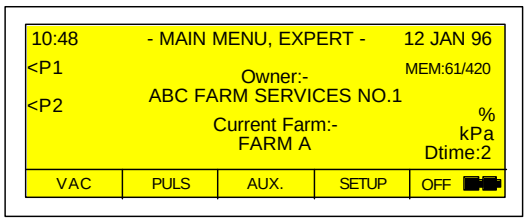
# Selecting a Farm

From the Main menu select SETUP, then Farm menu.




1. Numbers displayed under 'Mem' show the number of memories used for each farm. eg. 10 memories used for 'FARM A'.
2. 'Used:' shows the number of farms in the directory. eg. 15 farms used out of 200 total available.
3. Move cursor down list.
4. Move cursor up list.
5. Select highlighted farm name.




The current Farm displayed in the Main menu is where vacuum and pulsation readings are/will be stored. Alarm settings for the selected Farm are recalled and used to determine any alarm conditions in Vacuum and Pulsation displays. For more information see Alarm pages.

# 34 – DairyTest Professional

## Adding/Editing Farm Names

Expert

**Setup**

When a new Farm is added, the alarm settings are copied from the <OWNER> Farm. These settings can be changed later if required. (See 'Alarms'). Up to 200 Farms may be stored in the Farm Directory.

From the Main menu select SETUP, then Farm menu.

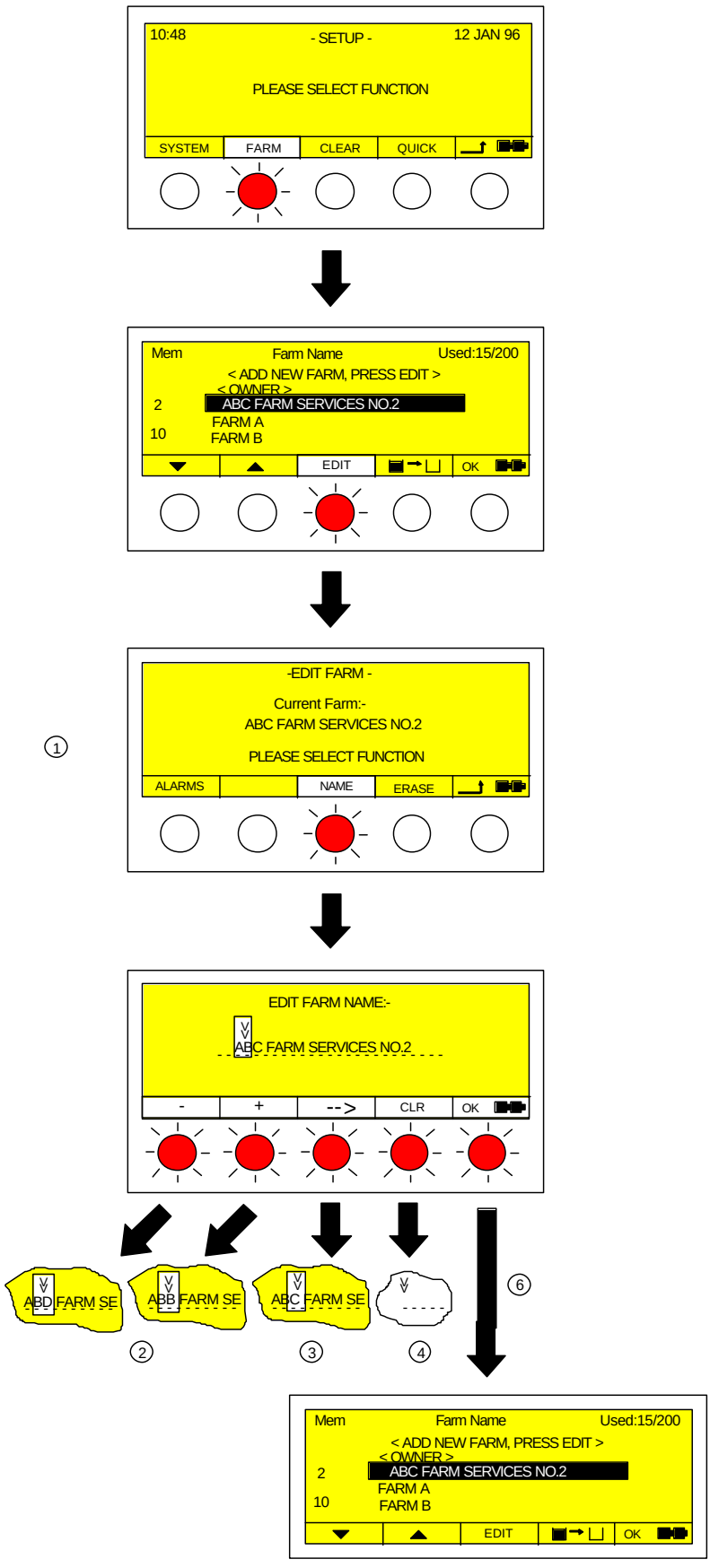
Highlight required farm using ▼ and ▲ butttons.

To add a new farm name, highlight <ADD NEW FARM, PRESS EDIT> then press EDIT.

To change an existing farm name, highlight the farm name then press EDIT.

1. Note that this screen does not appear if adding a new farm.
2. Move through character set.
3. Move cursor to next location.
4. Clear entire name.
5. Accept changes.

Character set shown at left.

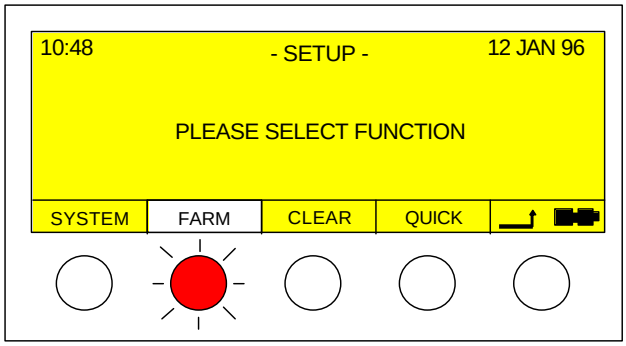



ABCDEFGHIJKLMNOPQRTSUVWXYZ&'()*+,-./0123456789

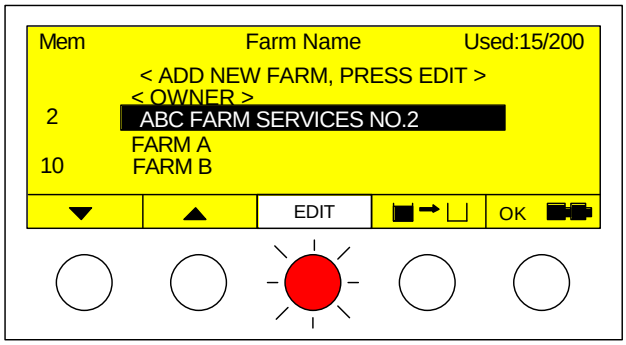
# Deleting a Farm Name

Only delete a Farm if the name is no longer needed or was added accidentally. If the name has changed, use Edit Name.

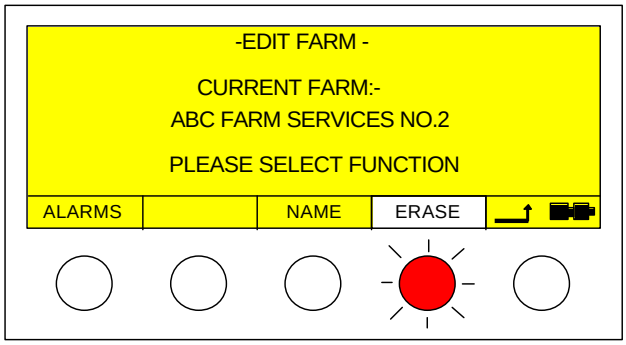
From the Main menu select SETUP, then Farm menu.

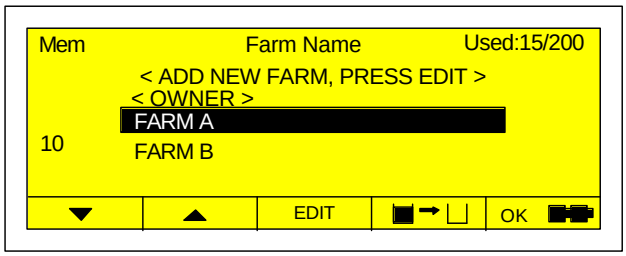



Highlight required farm using ▼ and ▲ butttons, then press EDIT.




If the Farm contains data in memory, a warning will appear asking you to confirm the erase.



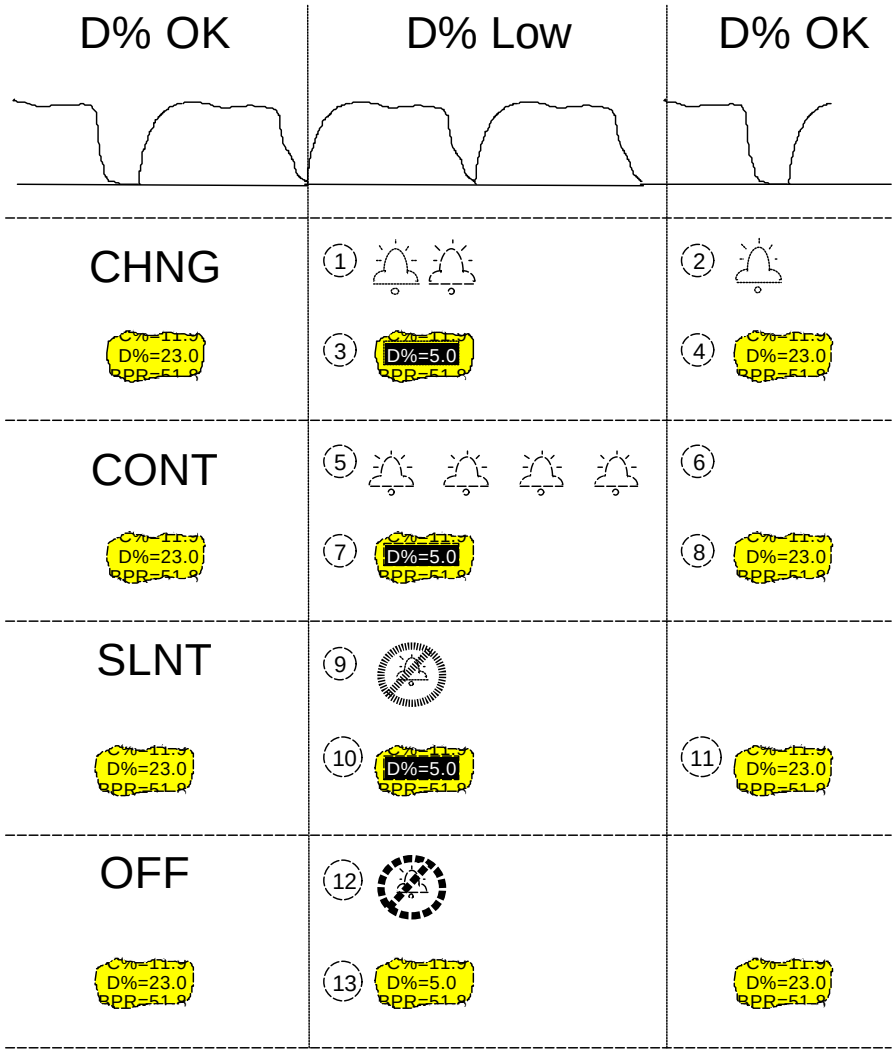
# 36 – DairyTest Professional

## Alarm Types

Expert

**Setup**

Alarms are used to show when selected readings are outside preset limits. Alarms can be set for A+B%, B%, D%, Dtime, Max Vacuum and Rate, each with an upper and lower limit. Default alarm settings are stored under <Owner> and copied to each farm when added. Each farm has its own settings. The various alarm types are shown below.




1. Beeps twice when alarm starts….
2. and once when alarm stops.
3. Readings in alarm are highlighted.
4. Highlight is cleared when alarm stops.
5. Beeps continuosly when in alarm.
6. Stops beeping when alarm stops.
7. Readings in alarm are highlighted.
8. Highlight is cleared when alarm stops.
9. No beeps (silent).
10. Readings in alarm are highlighted.
11. Highlight is cleared when alarm stops.
12. No beeps (silent).
13. Readings in alarm are not highlighted.

# Turning Alarms on/off and viewing settings

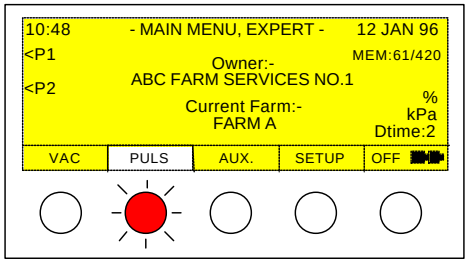
Expert

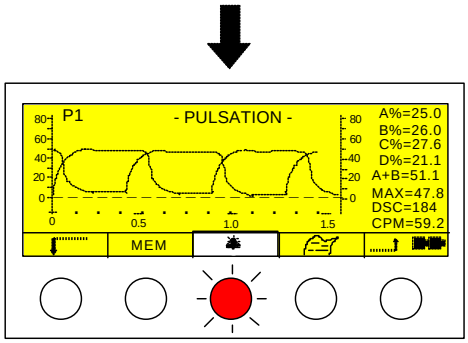
**Pulsation**
**Vacuum**

From the Main menu select the mode (Vacuum or Pulsation) you want to work with.

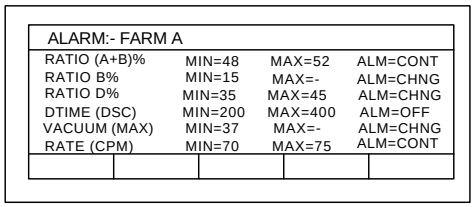
1. Alarms OFF.
2. Hold Down.
3. Alarm Settings.
4. Release.
5. Alarms ON.
6. Alarms OFF.

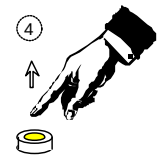
Note: Turning Alarms ON or OFF in Vacuum mode does not affect Alarms in Pulsation mode, and vice-versa.

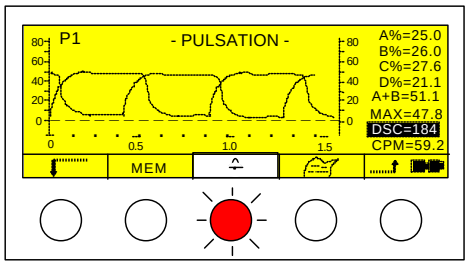


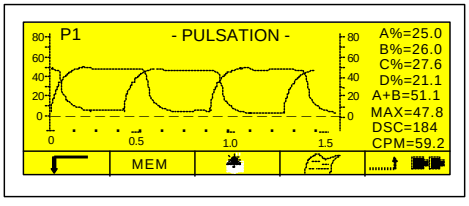







# 38 – DairyTest Professional

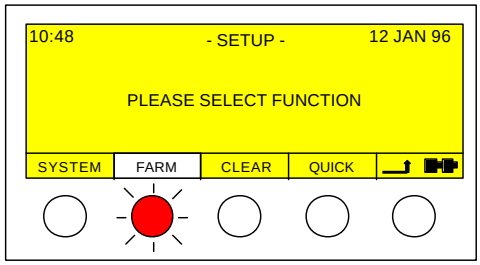
## Changing Alarm Limits

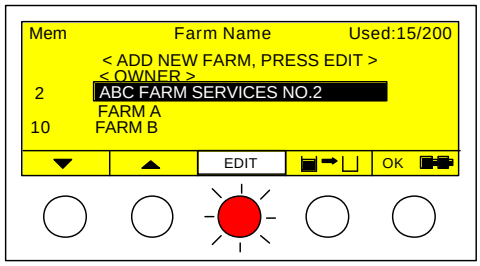
Expert

**Setup**

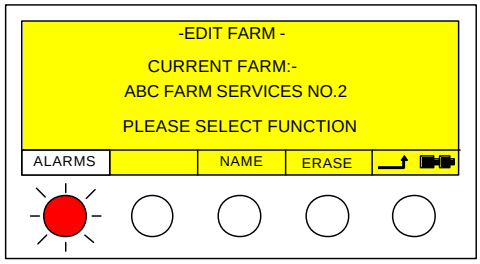
See “Alarm Types” for a description of the various alarm settings available.

From the Main menu select SETUP, then Farm menu.



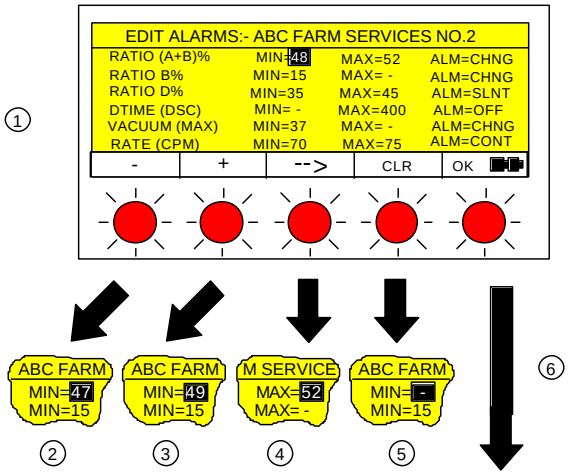




Highlight required farm using ▼ and ▲ butttons, then press EDIT.

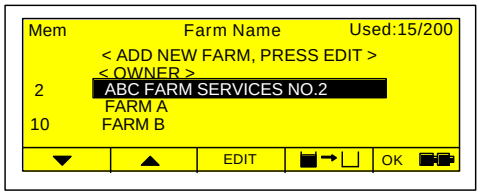



1. The “-“ limit prevents that parameter from being checked. Eg. To montor if B% falls below 15%, but ignore high-side fluctuations, set B% MIN to 15 and B% MAX to “-“. See screen at left.
2. Decrement setting.
3. Increment setting.
4. Move cursor to next setting.
5. Clear setting.
6. Accept changes.

To recover a cleared setting, press the increment or decrement button. If you miss a setting or make a kistake, push the → button until the cursor returns to the setting you want to change.




Note: Default alarm limits are stored under <OWNER> and loaded into a new farm when created. To change the default settings, highlight <OWNER> in the above sequence.



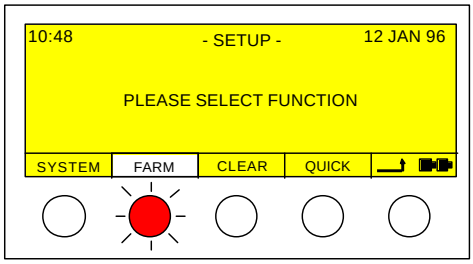
Expert

Setup

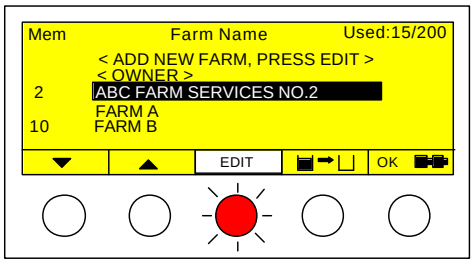
# Changing Alarm Type

See “Alarm Types” for a description of the various alarm settings available.

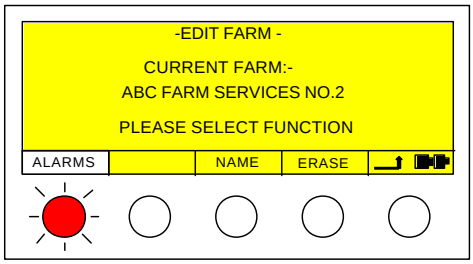
From the Main menu select SETUP, then farm menu.



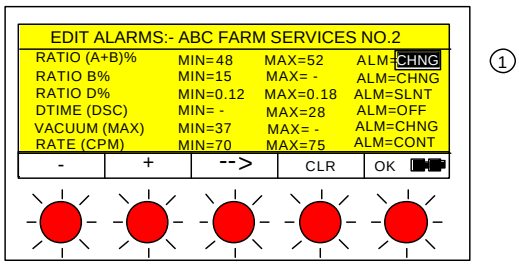

Highlight required farm using ▼ and ▲ butttons, then press EDIT.

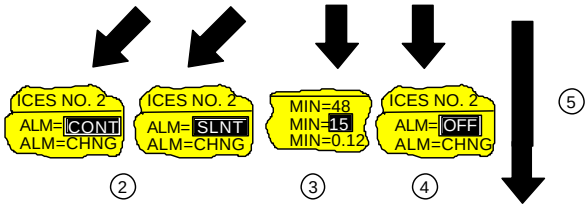



1. Alarm types can be edited at the same time as other alarm settings.
2. Moves through alarm types.
3. Move cursor to next setting.
4. Turn alarm OFF.
5. Accept changes.

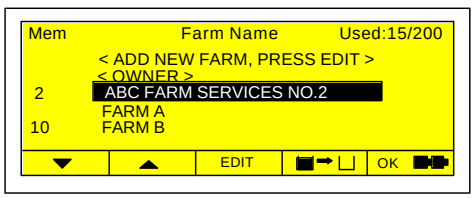



When highlight is on ALM=, alarm type is altered. If you miss a setting or make a mistake, push the → button until the cursor returns to the setting you want to change.




Note: Default alarm limits are stored under <OWNER> and loaded into a New Farm when created. To change the default settings, highlight <OWNER> in the above sequence.



# 40 – DairyTest Professional

Expert

## Memories

DairyTest has a large memory capacity for storing measurements. To simplify testing they are numbered to suit a typical test procedure. The Main Menu shows the number of memories used and the total available in the top right hand corner. e.g. 127/420 means 127 memories used out of 420 total.

Pulsation memories are labelled by Stall, with an “A” or “B” sub-stall to allow data to be stored before and after any faults are corrected. For example, in Stall 6, the “before” readings could be saved in position 6A and the “after” readings in 6B.

Vacuum memories are labelled by the typical recording points, Pump inlet, Regulator etc. Tachometer memories are numbered #1, #2, etc.

To store readings in memory a typical sequence would be:-

1. Turn DairyTest on and connect hoses.
2. Select farm.
3. Enter Pulsation (or Vacuum) mode (PULS or VAC).
4. Select Memory mode (MEM).
5. Select Stall number, making sure you start with the “A” position (▼, ▲).
6. Press M+ to save the “before” data in position “A”.
7. Fix any problems making sure readings are within spec.
8. Press ▲ button to move memory to position “B”.
9. Press M+ to save the “after” data in position “B”.
10. Move to next Stall and repeat steps 5 to 8.

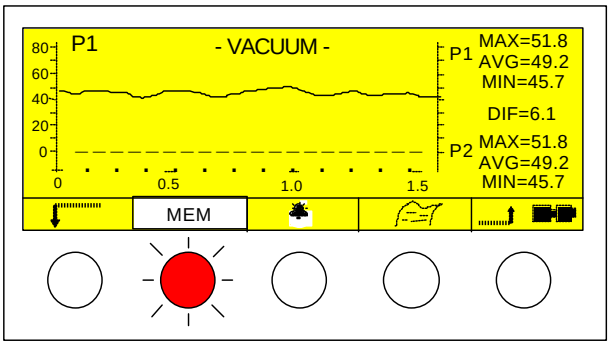
All memories are independent of each other, and any Stall/sub-stall position can be used in any sequence. Both graph and data for both ports are saved automatically when M+ is pushed, regardless of the current display settings. DairyTest will warn you if you are about to overwrite a memory. Memories are not erased when the unit is turned off. If the batteries are too low for DairyTest to turn on, the memory will still be saved for up to 1 month.

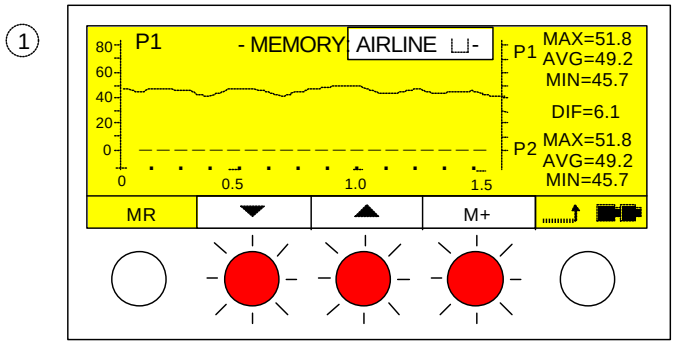
# Saving Vacuum readings

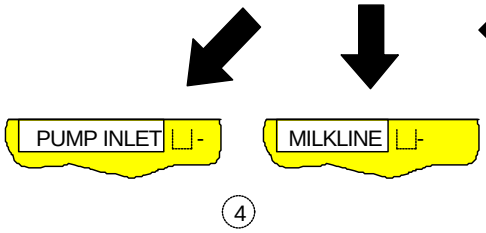
Up to 10 Vacuum readings per farm can be saved. Each memory stores graph and data for both ports and are labelled as the names of typical measurement points in a milking machine.

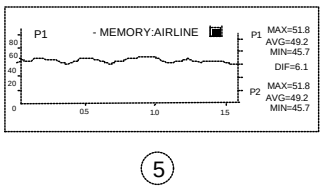
1. Displays current memory.
2. Memory empty.
3. Memory used.
4. Moves through list of Vacuum memories shown on right.
5. Saves readings to current memory in current farm.

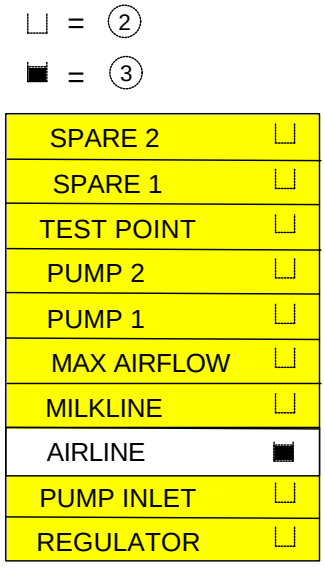
Expert



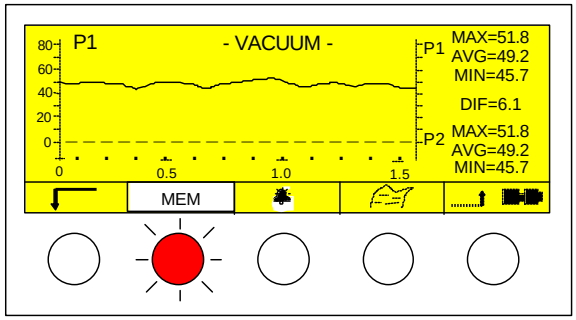
# 42 – DairyTest Professional

## Recalling Vacuum readings

Expert

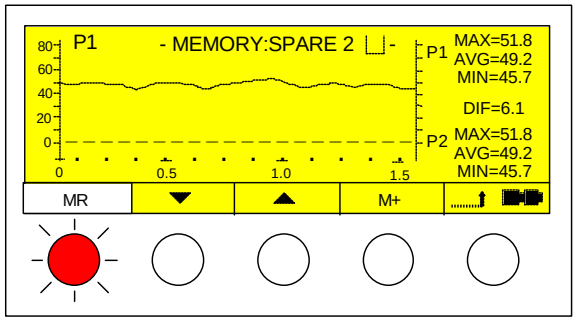
**Vacuum Memory Recall**

Memory Recall (MR) is used to view data previously saved to memory (only memory positions which have been used can be viewed).




Select Memory Recall (MR) mode. Memory Recall mode only operates when at least one vacuum memory in the current farm has been used.

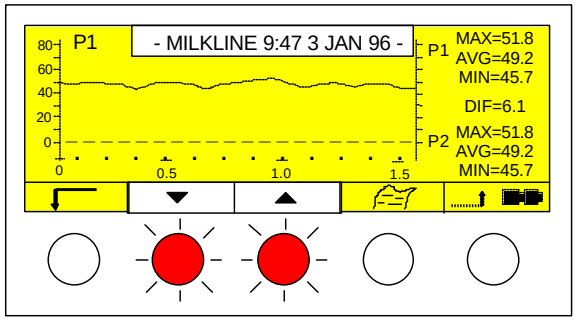
1. Memory empty.
2. Memory used.




␣ = ①

■ = ②

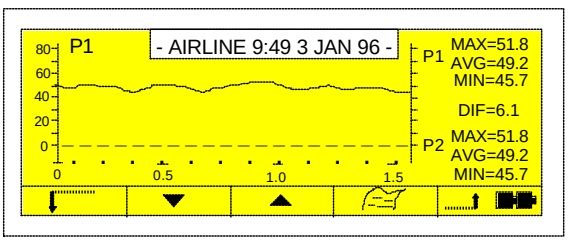
Memory Recall mode can be identified by the date and time in the title.

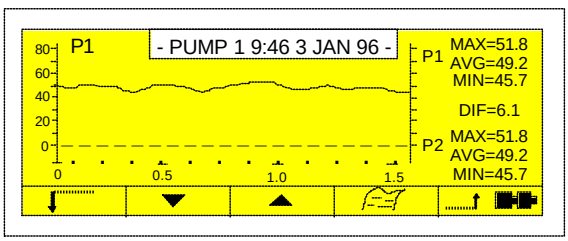



eg.:

| | |
|---|---|
| SPARE 2 | ␣ |
| SPARE 1 | ␣ |
| TEST POINT | ␣ |
| PUMP 2 | ␣ |
| PUMP 1 | ■ |
| MAX AIRFLOW | ␣ |
| MILKLINE | ■ |
| AIRLINE | ■ |
| PUMP INLET | ␣ |
| REGULATOR | ␣ |

Moves the display through the list of used Vacuum memories.
See example shown on right.



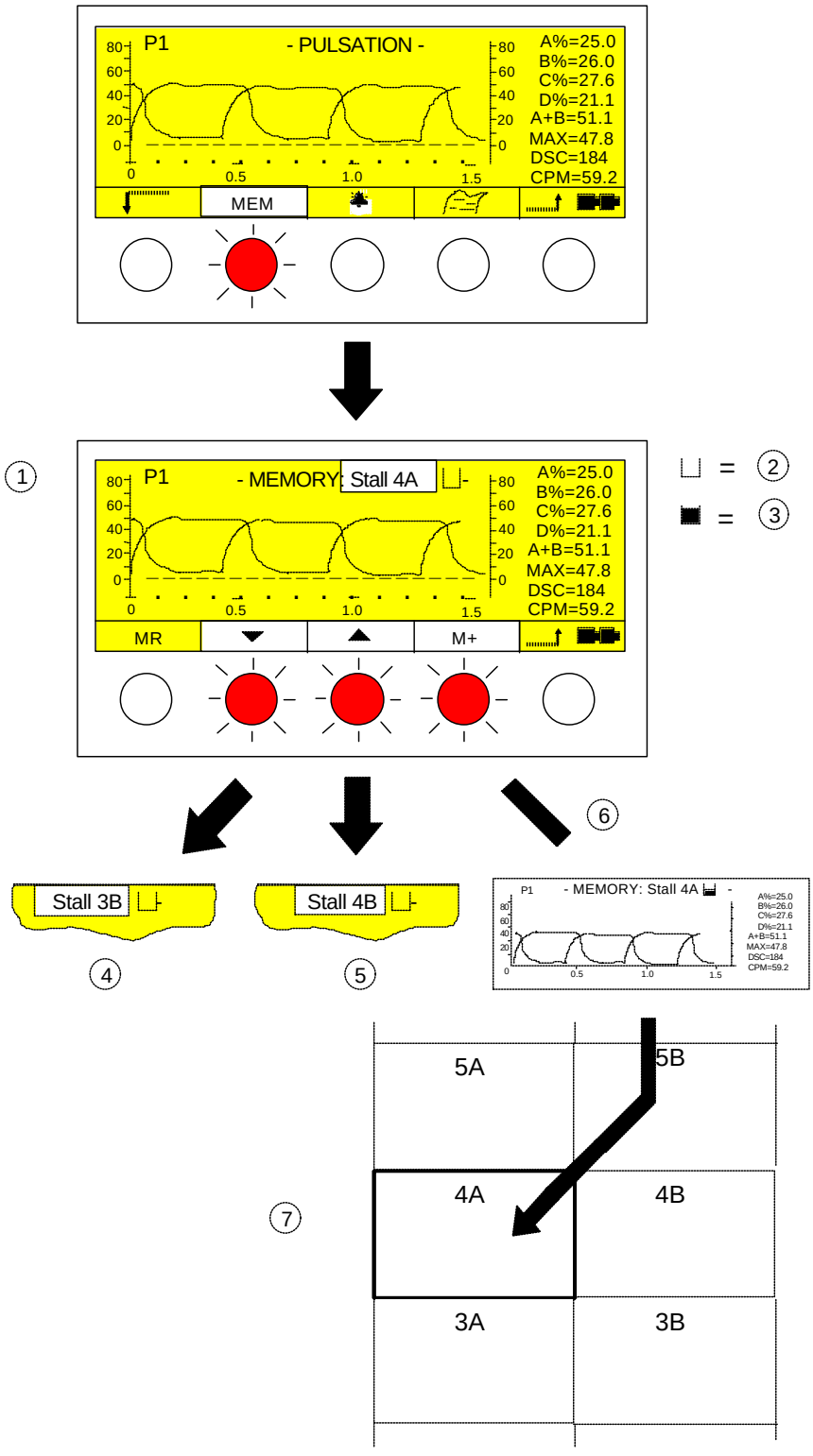



# Saving Pulsation readings

DairyTest allows up to 198 Pulsation memories per farm. Each memory stores graph and data for both ports and are labelled as Stall 1 to 99 for convenience. Each stall position has two memories - “A” and “B” which can be used for ‘before and after’ measurements to keep track of testing etc.

1. Title shows current memory number. Readings continue to update.
2. Memory empty.
3. Memory used.
4. Decrements Stall/sub-stall.
5. Increments Stall/sub-stall.
6. Saves readings to current memory in current farm.
7. Maximum stall number = 99.

The current Stall number is saved if the unit is turned off, but returned to 1A if a new farm is selected.



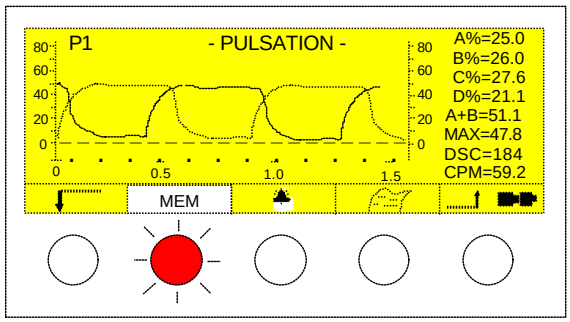
# 44 – DairyTest Professional

## Recalling Pulsation readings

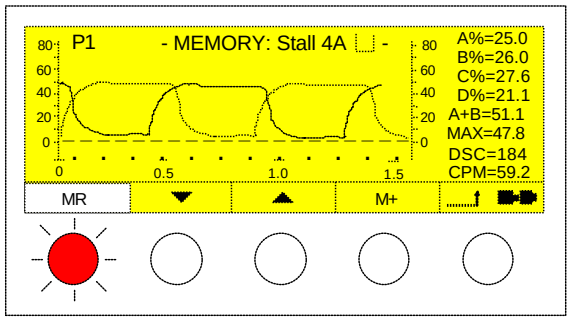
Expert

**Pulsation Memory Recall**

Memory Recall (MR) is used to view data previously saved to memory (only memory positions which have been used can be viewed).

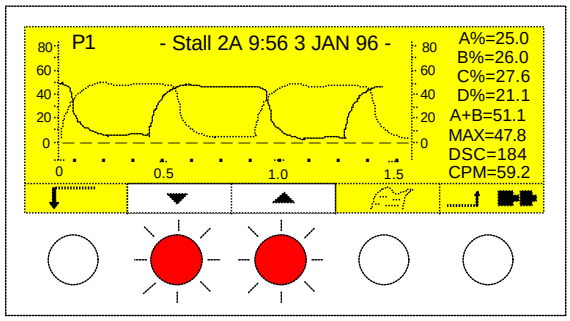



Select Memory Recall (MR) mode. Memory Recall mode only operates when at least one Pulsation memory in the current farm has been used.




1. Memory empty.
2. Memory used.

Memory Recall mode can be identified by the date and time in the title.



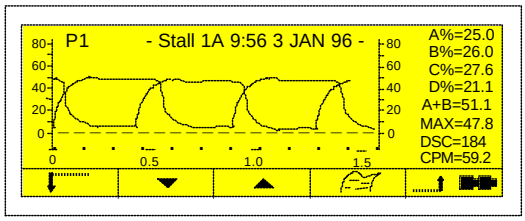

⌴ = ①

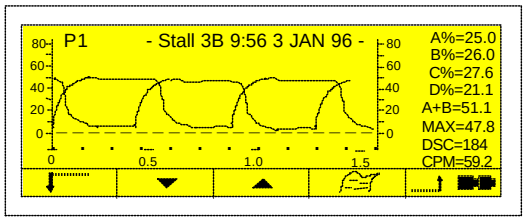
■ = ②

eg.:

| | |
|---|---|
| 4A ⌴ | 4B ⌴ |
| 3A ⌴ | 3B ■ |
| 2A ■ | 2B ⌴ |
| 1A ■ | 1B ⌴ |

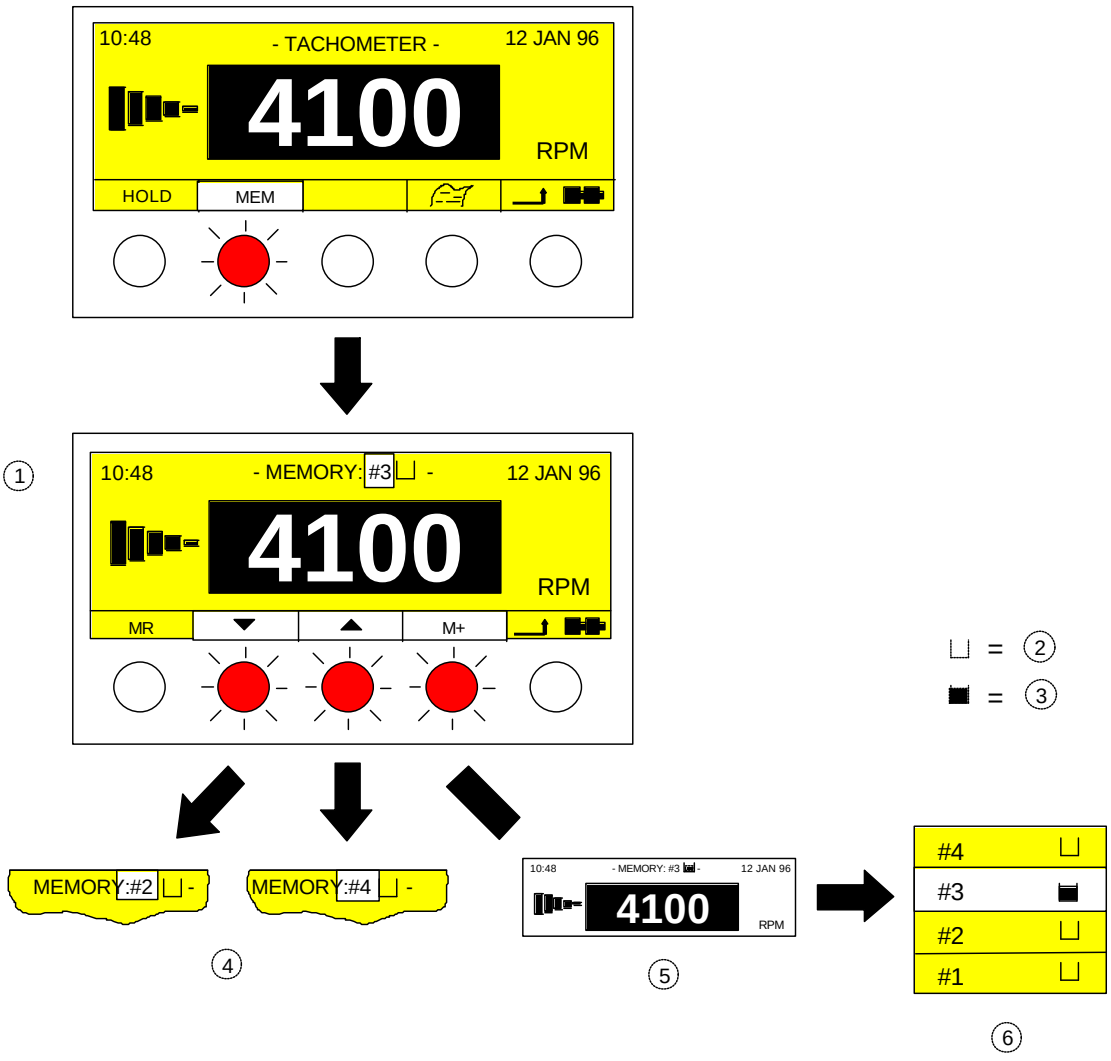
Moves display through list of used Pulsation memories. See example shown on right.



# Saving Tachometer readings

1. Displays current memory
2. Memory empty.
3. Memory used.
4. Moves through list of memories shown on right.
5. Saves readings to current memory in current farm.
6. Tachometer has 4 memories,



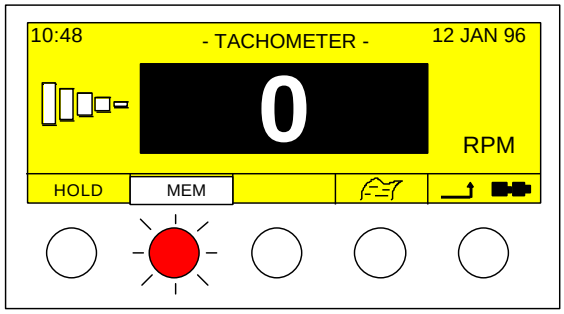
# 46 – DairyTest Professional

## Recalling Tachometer readings

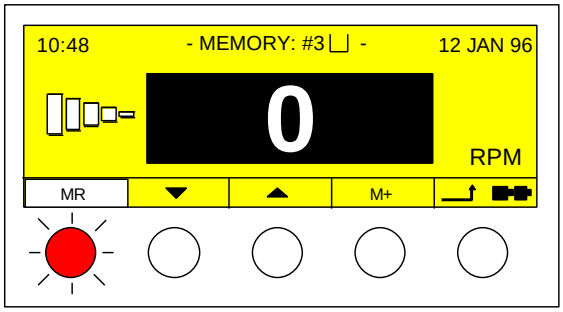
Expert

**Tachometer Memory Recall**

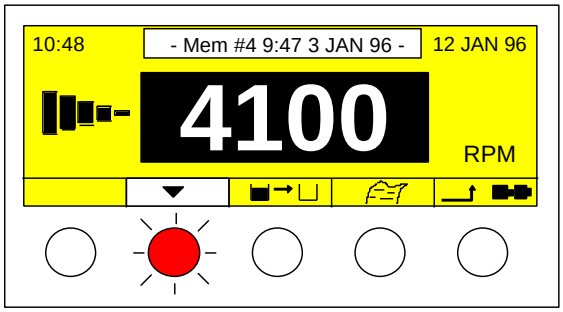
Memory Recall (MR) is used to view data previously saved to memory (only memories that have been used can be viewed).




Select Memory Recall (MR) mode. Memory Recall mode only operates when at least one memory in the current farm has been used.

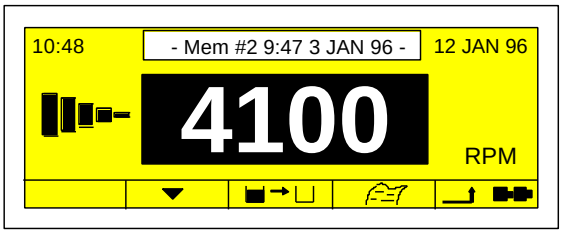



Memory Recall mode can be identified by the date and time in the title.

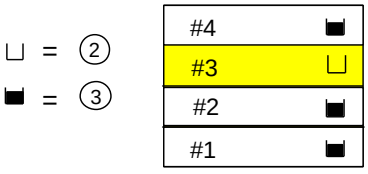



1. Moves display through list of used memories. See example below.
2. Memory empty.
3. Memory used.

① 




e.g.:



## Printing from Memory

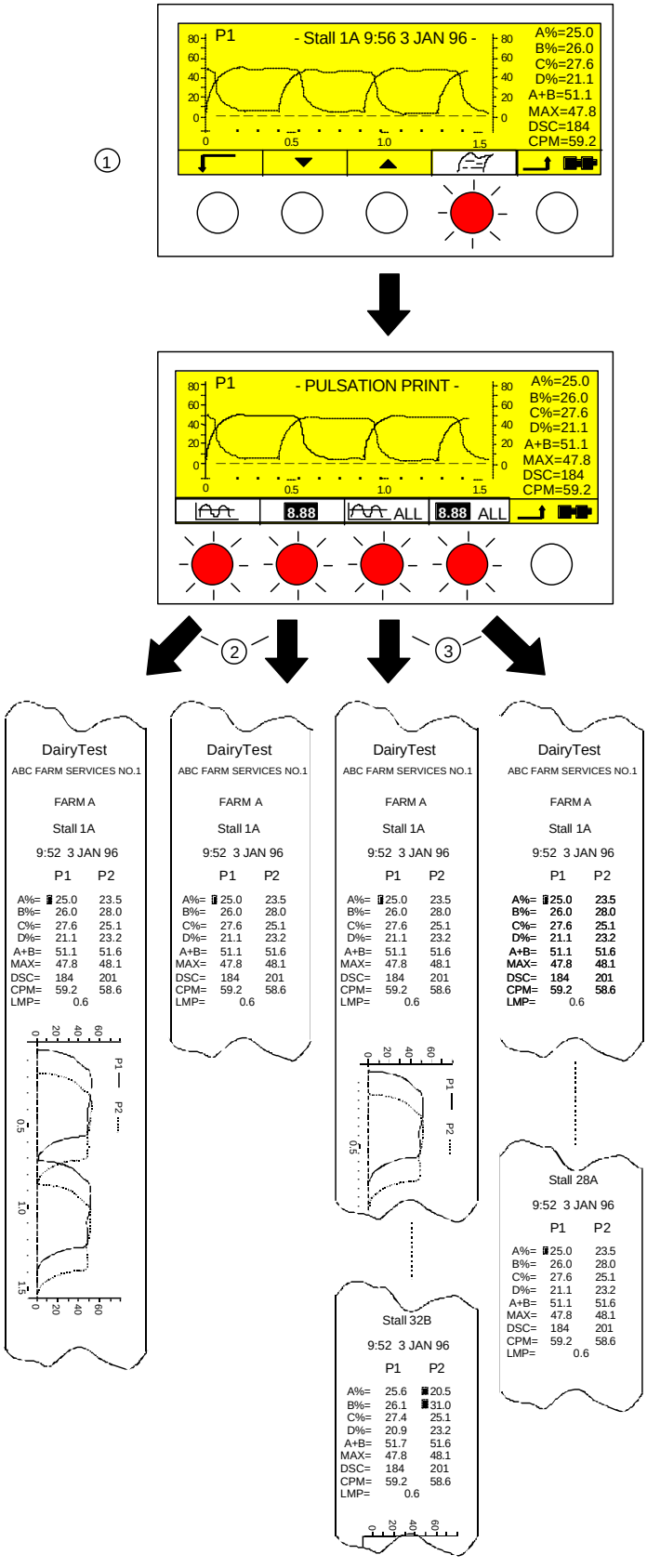
Memories can be printed one at a time as data, or data plus graph. Alternatively, all memories in the current farm can be printed - with or without graph. Tachometer memories do not have graph options.

1. From Memory Recall select Print menu.
2. Prints displayed memory.
3. Prints ALL (Vacuum or Pulsation) memories for current farm.

# 48 – DairyTest Professional

Expert

**Pulsation Memory Recall**
**Vacuum Memory Recall**
**Tachometer Memory Recall**



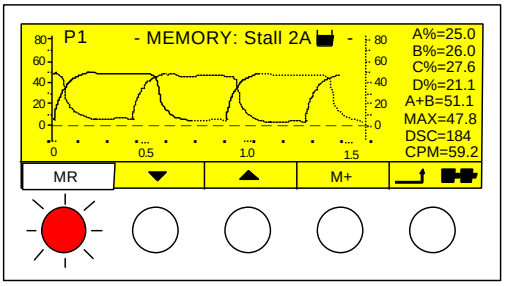
Expert

**Pulsation Recall Display**
**Vacuum Recall Display**

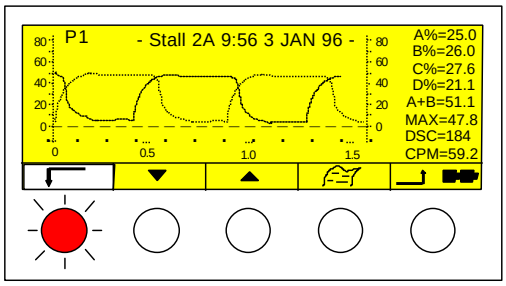
# Erasing Farm Memories - Vacuum/Pulsation

Select farm whose memories you want to erase.

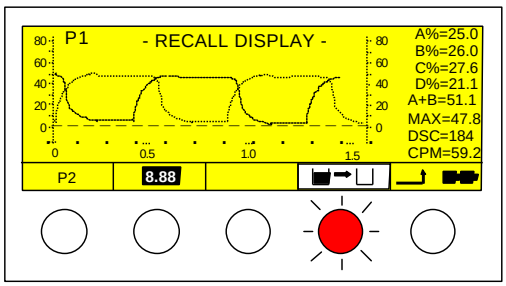
From Vacuum or Pulsation select MEM then MR.



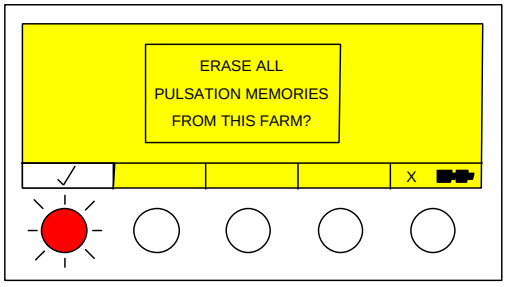

Select Display menu.



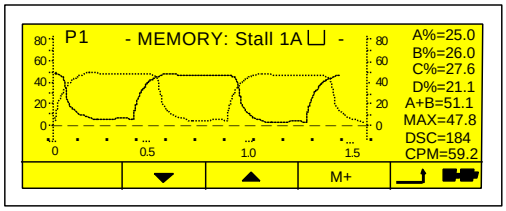

Select erase (■→└).




Confirm erase.




Memories erased.



# 50 – DairyTest Professional

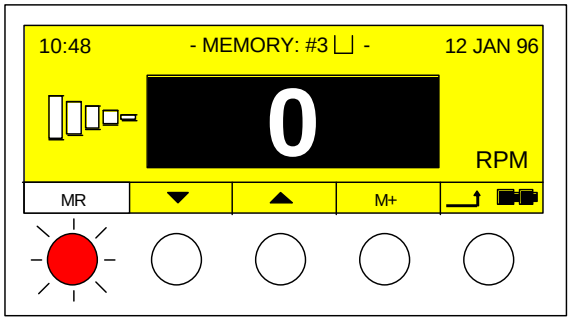
## Erasing Farm Memories - Tachometer

Expert

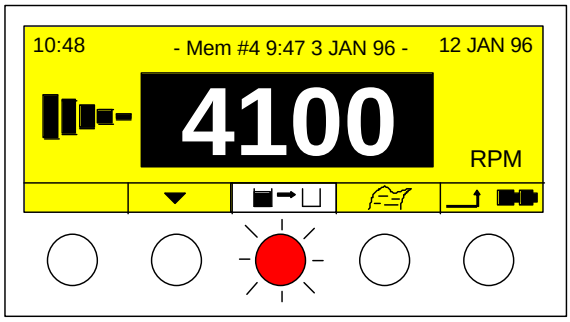
**Tachometer Memory Recall**

Select farm whose memories you want to erase.

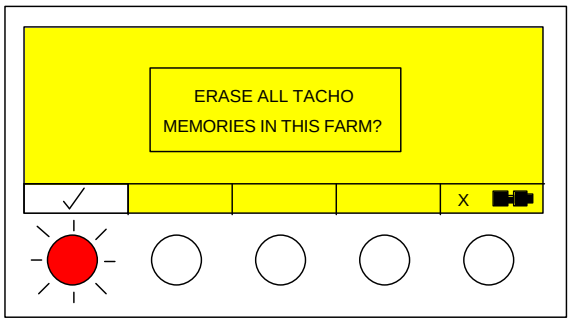
From Tacho select MEM, then MR.



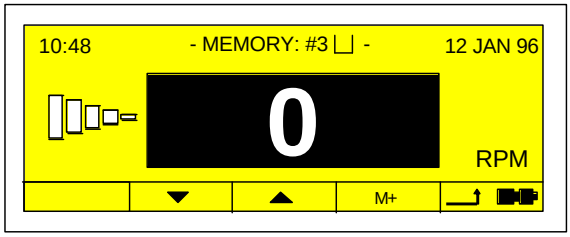

Select erase ( ).




Confirm erase.



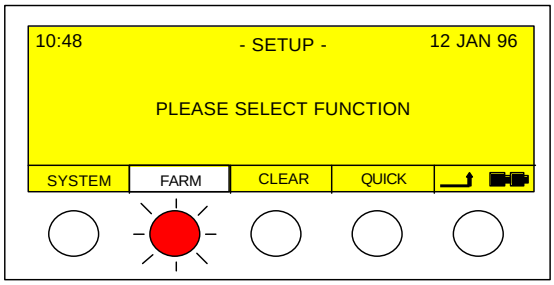

Memories erased.



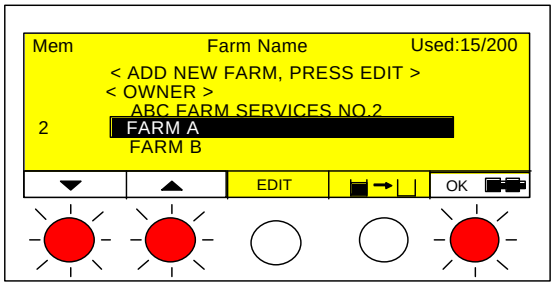
# Erasing Farm Memories - ALL

To erase ALL memories in selected farm:

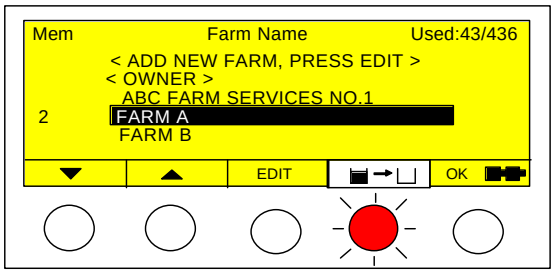
From Main menu select SETUP, then FARM.



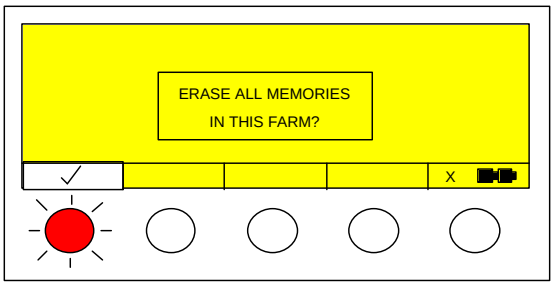

Select farm whose memories you want to erase.



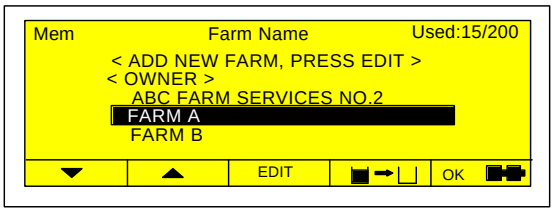

Select erase ( → ).




Confirm erase.




Memories erased.



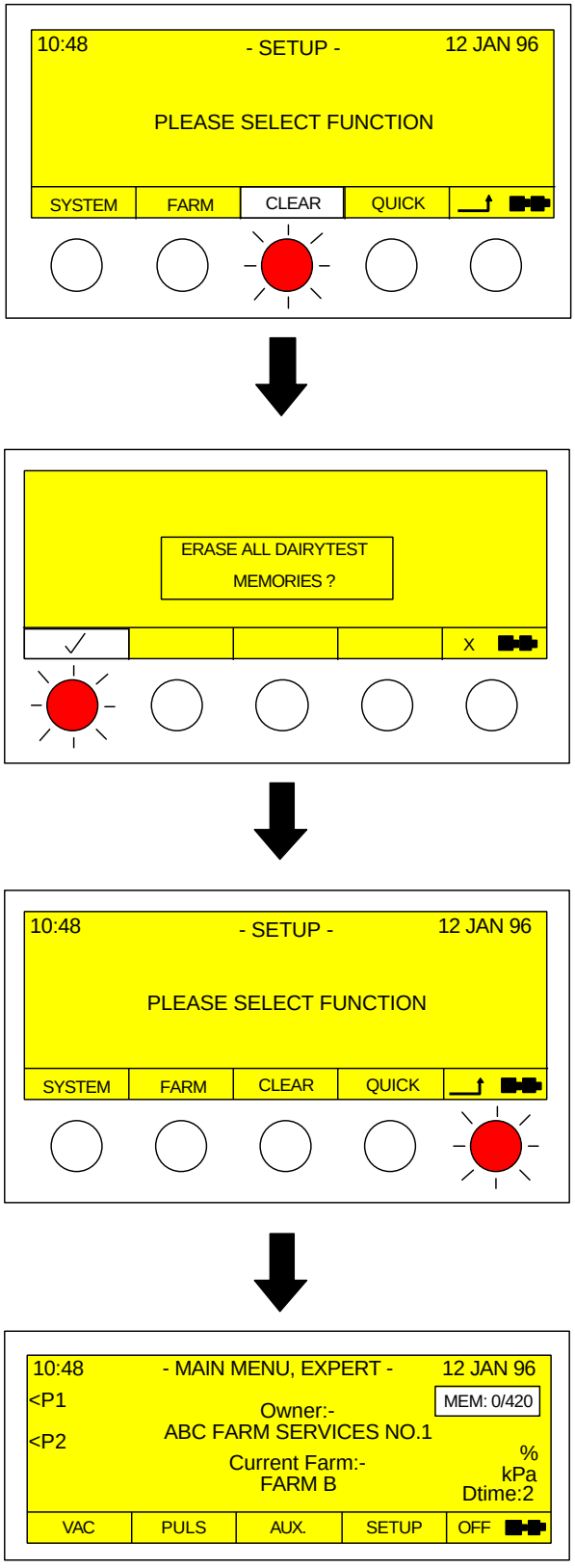
# 52 – DairyTest Professional

## Erasing all Memories

Expert

**Setup**

This function erases ALL memories in ALL farms. To erase mode (Pulsation, Vacuum or Tachometer) memories in the current farm or all memories for the current farm, see ‘Erasing Farm Memories’. To erase the farm name, see ‘Deleting a Farm Name’.



# Vacuum Recorder

The Vacuum Recorder provides long-timebase 2-channel vacuum recording. Readings are automatically saved to memory for later viewing, and you can view the recorded chart **whilst still recording**.

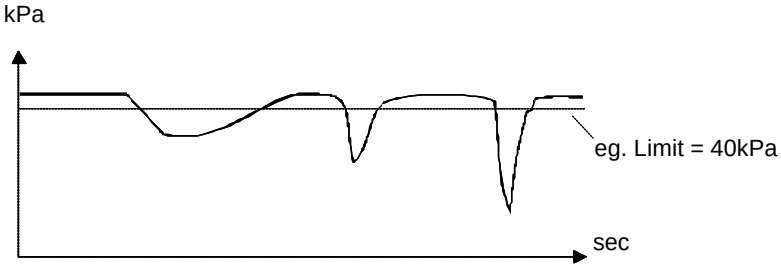
Vacuum lines can be monitored for changes (fluctuations) from an absolute vacuum, shifts from the average level (taken over the last 30 seconds). Details of the worst error conditions along with the total number of fluctuations and vacuum stability are recorded for each channel.

Each Farm can have one Vacuum Recording which uses up to 21 DairyTest memories. DairyTest will warn you if less than 21 memories are available when the Vacuum Recorder is started.

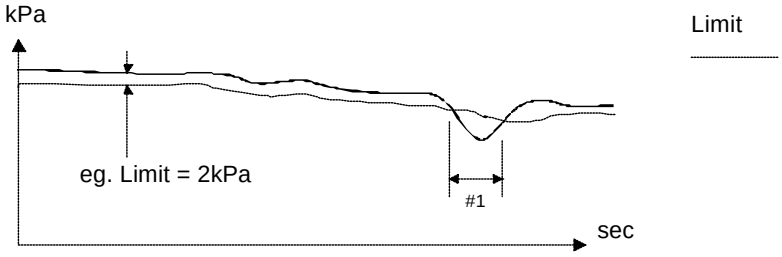
The following conventions and abbreviations are used for the Vacuum Recorder:

**WDS: W**idest **D**uration, **S**econds. Duration of widest fluctuation.
**WDV: W**idest **D**uration, **V**acuum level. Minimum vacuum of widest fluctuation.
**DPS: D**ee**p**est Duration, **S**econds. Duration of deepest fluctuation.
**DPV: D**ee**p**est Duration, **V**acuum level. Minimum vacuum of deepest fluctuation.
**NUM: Num**ber of fluctuations since recording started.
**%OK:** Percentage of time that vacuum level has been above the LIMIT setting.

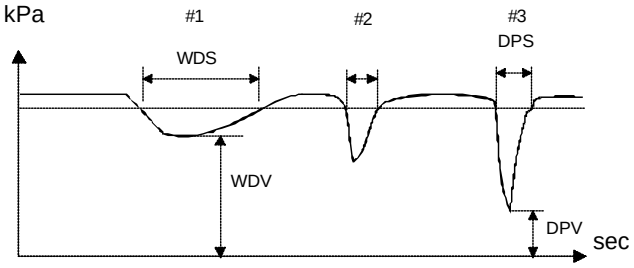
**Absolute Mode\ Mode absolu\ Absolut-Modus\ Modo Absoluto -**

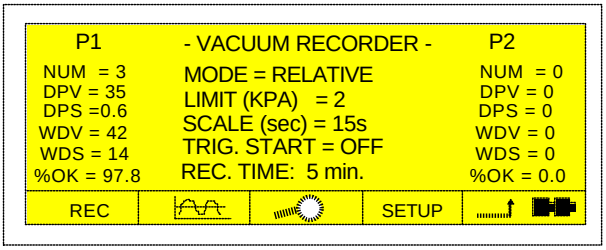



**Relative Mode\ Mode relatif\ Relativ-Modus\ Modo Relativo -**




**Example Recording\ Exemple denregistrement Beispiel-Aufzeichnung\ Registro de Ejemplo -**



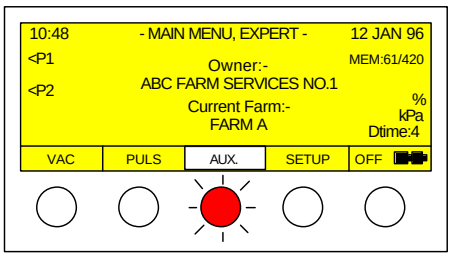
# 54 – DairyTest Professional

## Setting up the Vacuum Recorder

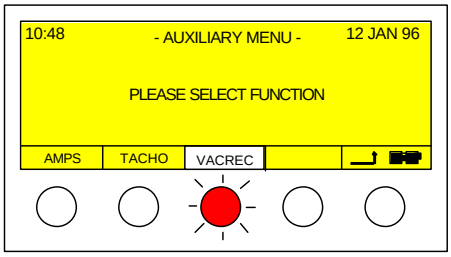
Expert

**Vacuum Recorder**

Select Auxiliary menu.

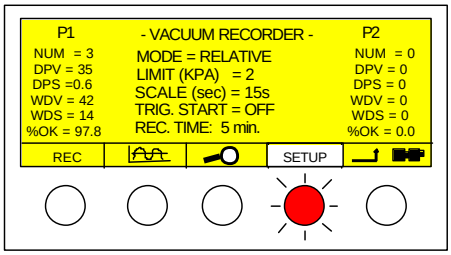


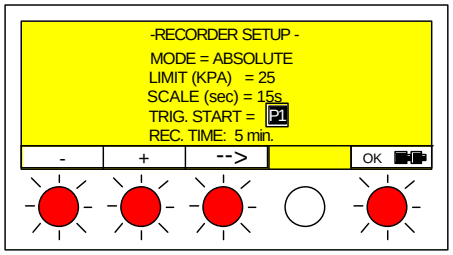

Select VACREC.

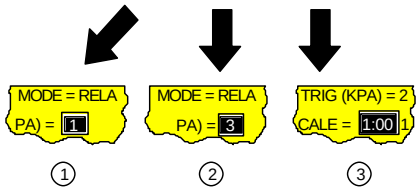


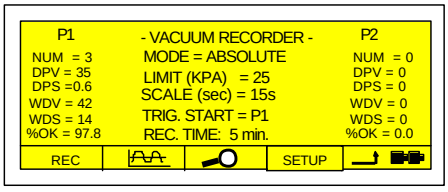

Select SETUP.

Note: Entering SETUP will erase previous recording.




① Decrement setting.

② Increment setting.

③ Move cursor to next item.

④ Accept changes.

# Setting up the Vacuum Recorder (cont.)

There are 4 settings that can be configured in SETUP; MODE, LIMIT, SCALE and TRIG. START.

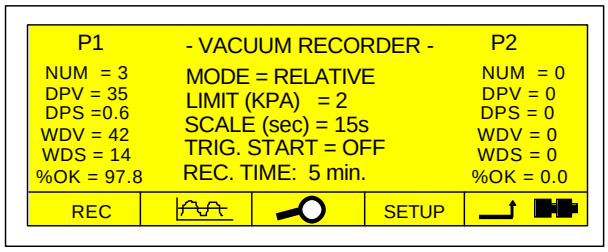
MODE sets the trigger mode to Absolute or Relative.

**Absolute** mode uses the LIMIT setting as the minimum vacuum below which a reading is considered a fluctuation. Use this mode when testing for ISO-spec. compliance or when the plant parameters are well defined and the vacuum source is stable.

**Relative** mode uses a 30 second moving average. A drop greater than the LIMIT setting below the moving avarage is considered a fluctuation. Relative mode is useful when initially setting up a plant or where the vacuum supply drifts slowly over time.

SCALE sets the time per screen to 15, 30 or 90 seconds.
REC. TIME shows the total recording time for the selected SCALE setting.

TRIG. START turns the trigger on for either P1 or P2, or OFF. TRIG. START is useful when you want to record a fluctuation at the fastest scale (15s). Set the LIMIT to the vacuum level required and recording will start when the trigger port (P1 or P2) FALLS below that level.



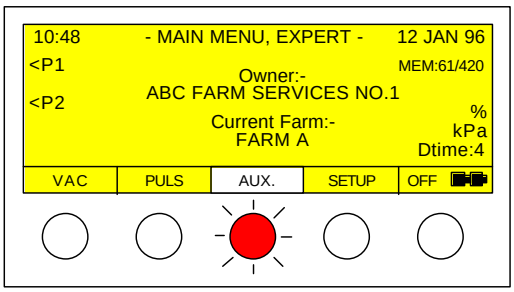
# 56 – DairyTest Professional

## Starting and Stopping the Vacuum Recorder

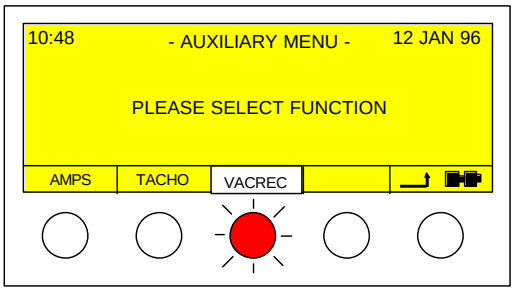
Expert

**Vacuum Recorder**

Select Auxiliary Menu

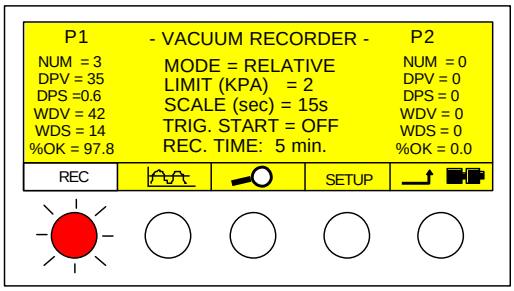



Select VACREC

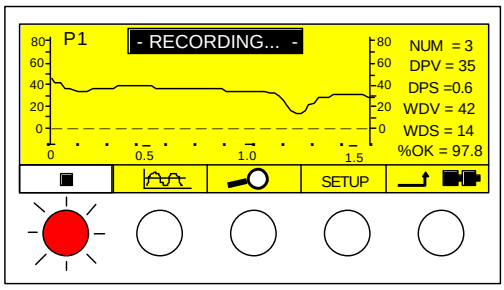


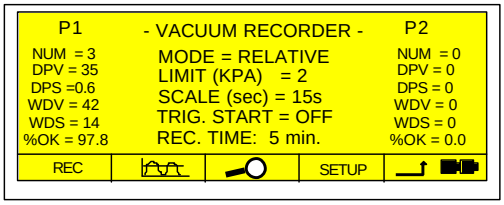

Start Vacuum Recorder

Note: Starting a recording will erase the previous recording.




Stop Vacuum Recorder



Expert

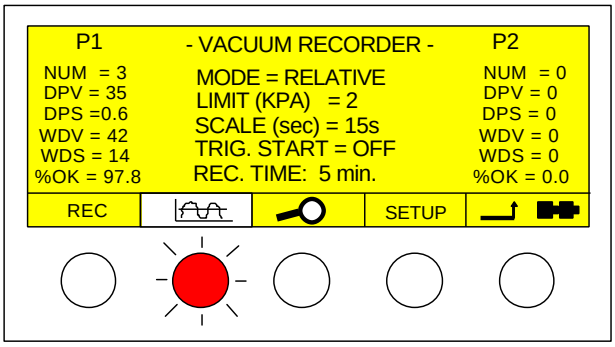
**Vacuum Recorder**

# Swapping between Graphic and Digital displays

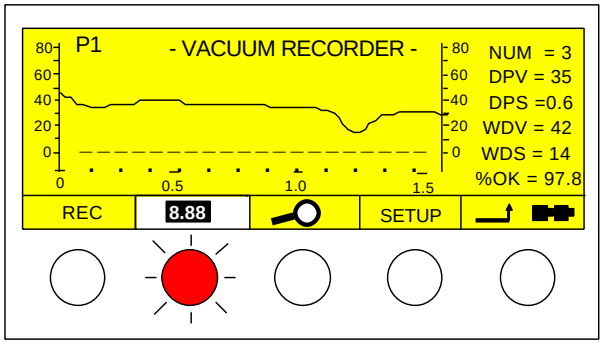
You can select the display mode either during or after a recording. In graphic mode the data displayed is that for the current port.

The Digital display shows readings for both ports, whereas Graphic mode shows the recorded graphs and data for one port only.

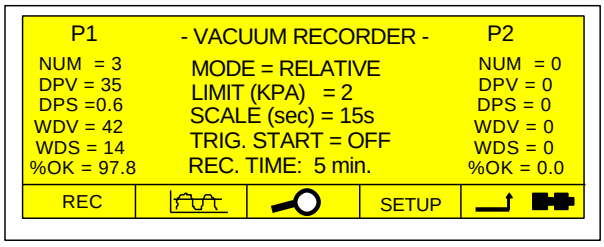
DIGITAL




GRAPHIC




DIGITAL



# 58 – DairyTest Professional

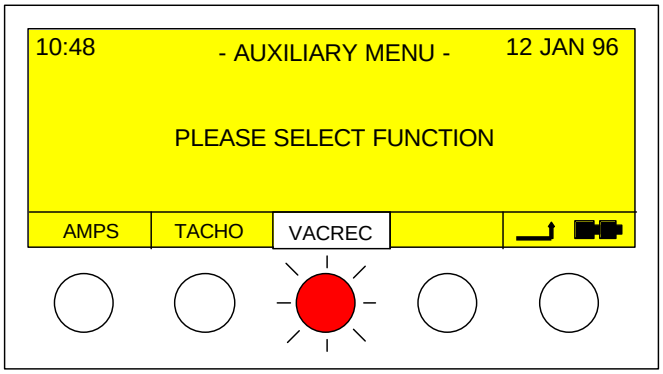
## Viewing a recording

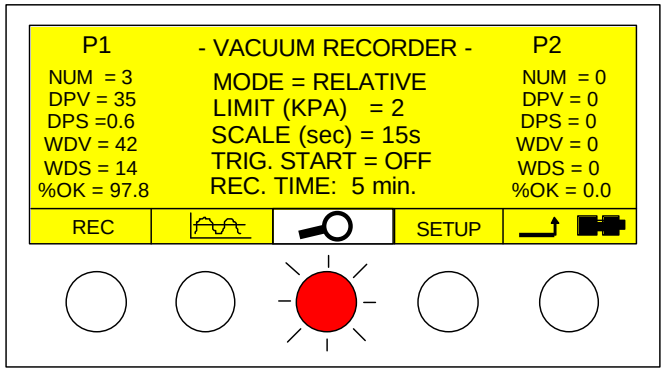
Expert

**Vacuum Recorder**

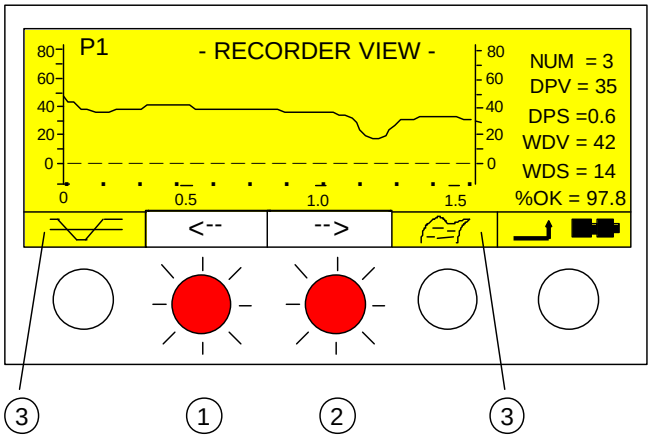
Data can be viewed whilst recording is being performed, or after it is completed.

If View mode is selected during a recording, a ‘snap-shot’ of the recording up to that point in time is taken and displayed. You can scroll through the ‘snap-shot’, but no analysis of the data is available.




From the Vacuum Recorder menu, select view ( ).

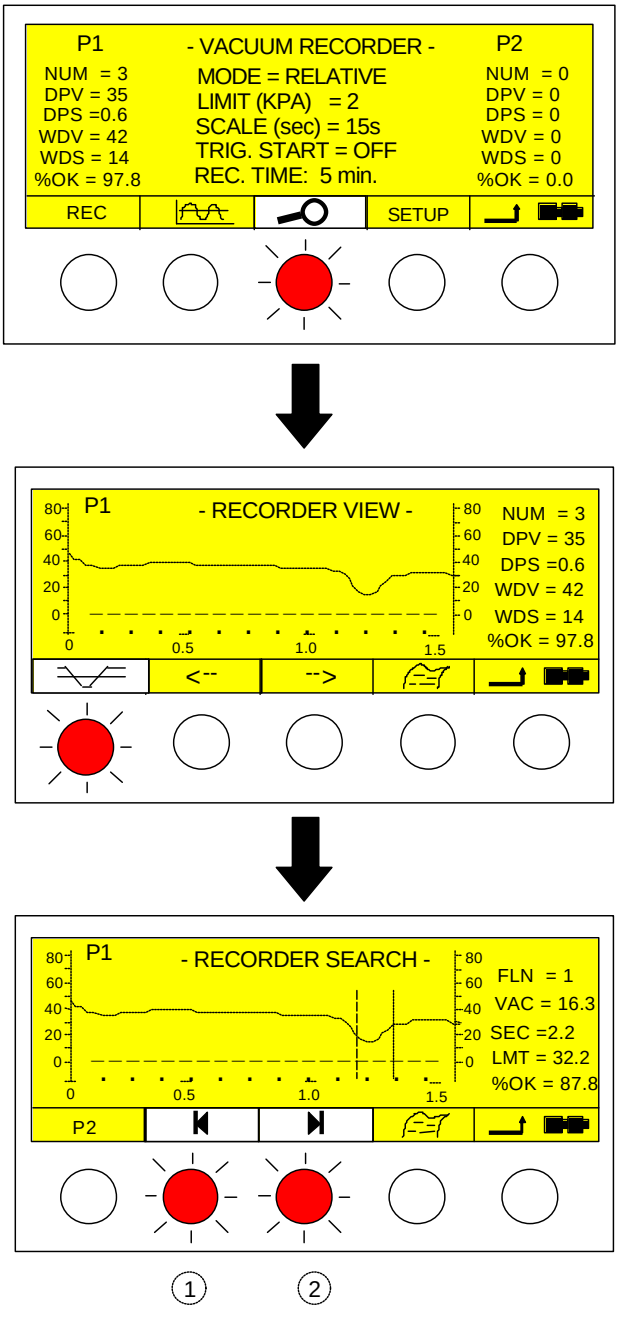



1. Moves VIEW left. (Graph moves to right)
2. Moves VIEW right. (Graph moves to left.
3. Print and search functions not available during recording. Only shown when recording has stopped.

# Searching For Fluctuations

Fluctuations that fall below the LIMIT setting can quickly be found using the Find-Next ( ⏭ ) and Find-Last ( ⏮ ) keys in the Recorder Search menu.

From Vacuum Recorder, select View ( 🔍 ).




Select Search ( ∿ ).

1. Find-Next ( ⏭ ). Cursor moves to next fluctuation.
2. Find-Last ( ⏮ ). Cursor moves to last fluctuation.

Vertical dotted cursor lines show beginning and end of fluctuation. Data displayed at right of screen is updated as the cursor is moved through the recording.

FLN - **Fl**uctuation **n**umber.

VAC - Lowest **vac**uum level during fluctuation.

SEC - Duration of fluctuation, in **sec**onds.

LMT - **Lim**it setting. Varies for Relative mode.

%OK - Vacuum levels to **beginning** of fluctuation that have been above the LIMIT setting, as a percentage of total recording time.

# 60 – DairyTest Professional

## Changing Port view

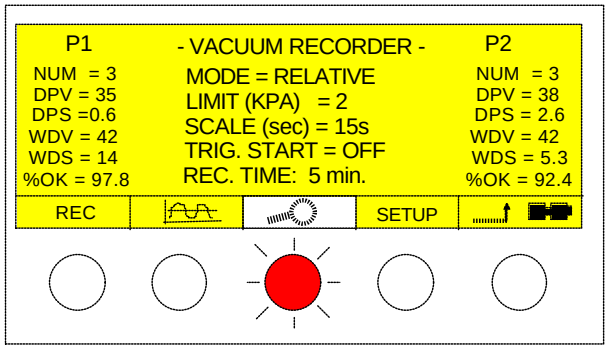
Expert

**Vacuum Recorder**

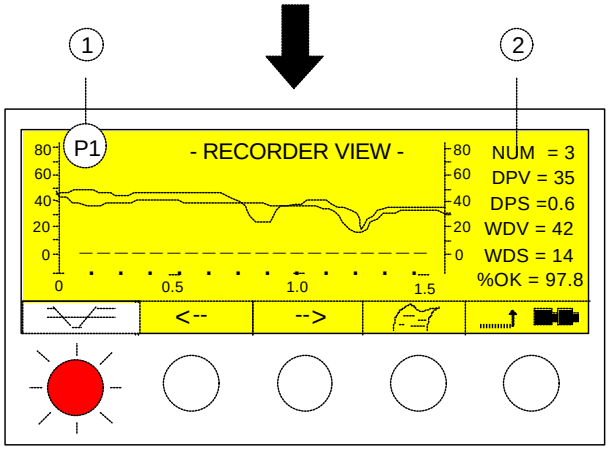
The Vacuum Recorder samples both Ports using the same setup information.

The current port will be the same as that when last in Vacuum Recorder mode.

From the Vacuum Recorder select View ( ).

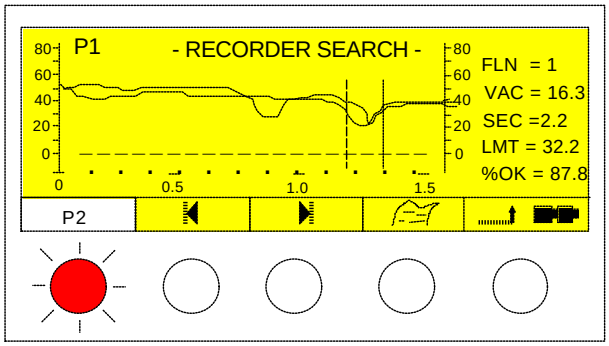



1. Current Port.
2. Current port's data.



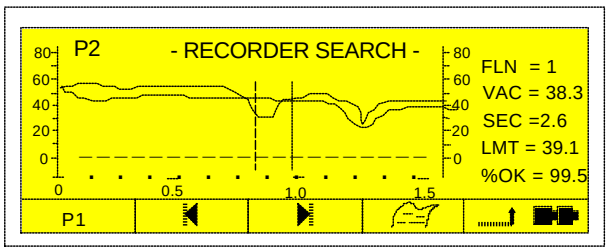

Select Search ( ).

PORT 1




Changes view to Port 2. Sets current port for Vacuum Recorder mode. Non-current port is shown dotted.

PORT 2




Push P1 to view Port 1.

# Printing a recording

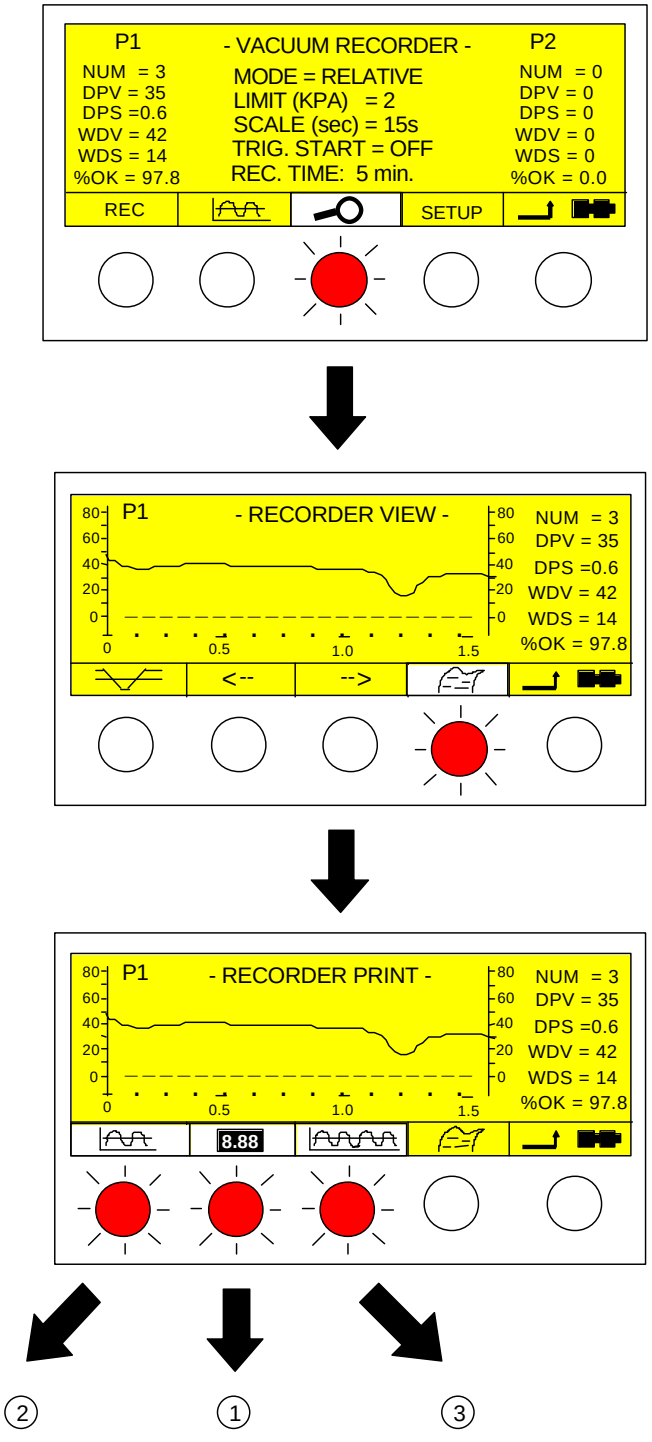
Expert

**Vacuum Recorder**

A Recording can be printed as summary data, current screen view or graph of the whole record.

From Vacuum Recorder select View ( ), then Print ( ).

1. Summary data only (8.88).
2. Current screen graph and summary data ( ).
3. Whole recorded graph and summary data ( ).



# 62 – DairyTest Professional

Expert

**Vacuum Recorder**

1

DairyTest

ABC FARM SERVICES NO.1
FARM A

9:52 3 JAN 96
Vacuum Recorder

MODE = RELATIVE
LIMIT (KPA) = 20
SCALE (sec) = 15s
TRIG. START = OFF
REC. TIME: 5 min.

| | P1 | P2 |
|---|---|---|
| NUM = | 3 | 0 |
| DPV = | 35 | 0 |
| DPS = | 0.6 | 0 |
| WDV = | 42 | 0 |
| WDS = | 14 | 0 |
| %OK = | 47.8 | 0 |

2

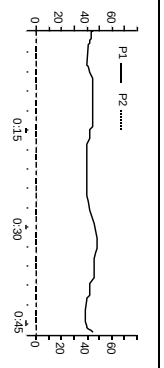
DairyTest

ABC FARM SERVICES NO.1
FARM A

9:52 3 JAN 96
Vacuum Recorder

MODE = RELATIVE
LIMIT (KPA) = 20
SCALE (sec) = 15s
TRIG. START = OFF
REC. TIME: 5 min.

| | P1 | P2 |
|---|---|---|
| NUM = | 3 | 0 |
| DPV = | 35 | 0 |
| DPS = | 0.6 | 0 |
| WDV = | 42 | 0 |
| WDS = | 14 | 0 |
| %OK = | 47.8 | 0 |




3

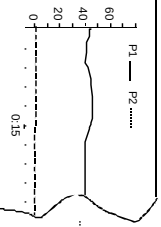
DairyTest

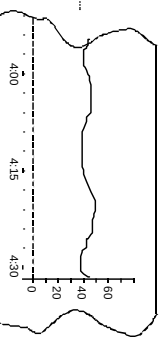
ABC FARM SERVICES NO.1
FARM A

9:52 3 JAN 96
Vacuum Recorder

MODE = RELATIVE
LIMIT (KPA) = 20
SCALE (sec) = 15s
TRIG. START = OFF
REC. TIME: 5 min.

| | P1 | P2 |
|---|---|---|
| NUM = | 3 | 0 |
| DPV = | 35 | 0 |
| DPS = | 0.6 | 0 |
| WDV = | 42 | 0 |
| WDS = | 14 | 0 |
| %OK = | 47.8 | 0 |



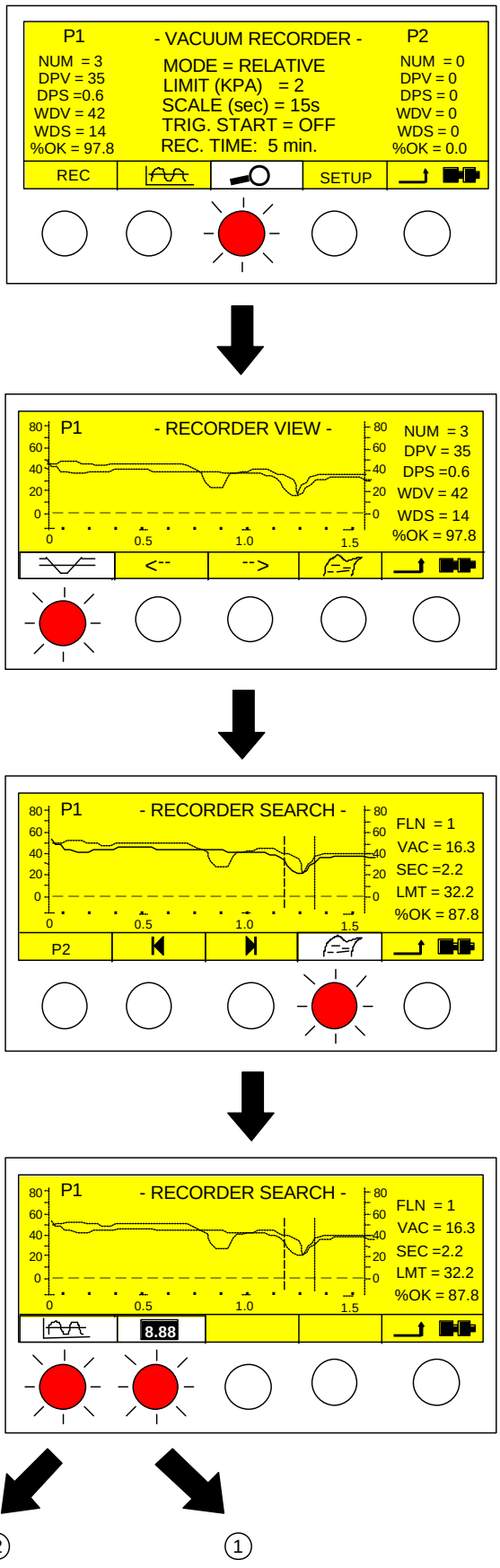



# Printing a recording (cont.)

A fluctuation can be printed as summary data or current screen view.

From Vacuum Recorder select View ( ), Fluctuation ( ), then Print ( ).

1. Summary data only (8.88).
2. Current screen view and summary data ( ).



# DairyTest Professional - 64

Expert

**Vacuum Recorder**

1

DairyTest

ABC FARM SERVICES NO.1

FARM A

9:52 3 JAN 96

Vacuum Recorder

MODE = RELATIVE
LIMIT (KPA) = 20
SCALE (sec) = 15s
TRIG. START = OFF
REC. TIME: 5 min.

| | P1 | P2 |
|---|---|---|
| FLN = | 1 | 0 |
| VAC = | 16.3 | 0 |
| SEC = | 2.2 | 0 |
| LMT = | 32.2 | 0 |
| %OK = | 87.8 | 0 |

2

DairyTest

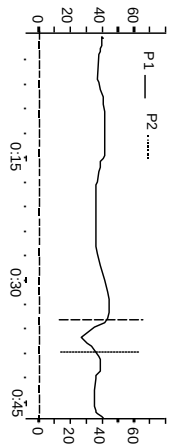
ABC FARM SERVICES NO.1

9:52 3 JAN 96

Vacuum Recorder

MODE = RELATIVE
LIMIT (KPA) = 20
SCALE (sec) = 15s
TRIG. START = OFF
REC. TIME: 5 min.

| | P1 | P2 |
|---|---|---|
| FLN = | 1 | 0 |
| VAC = | 16.3 | 0 |
| SEC = | 2.2 | 0 |
| LMT = | 32.2 | 0 |
| %OK = | 87.8 | 0 |



# 66 – DairyTest Professional
## Setup

Expert

**Vacuum Recorder**

DairyTest has several settings that control the way the meter operates. In general these do not need to be changed often.

In Expert mode the Setup menu allows System settings such as date/time to be altered, Farm memories to be edited, DairyTest's memory contents to be cleared, as well as changing to the easy-to-use Quick mode.

In addition the System screen contains a PIN field to allow the owner's name to be entered. The PIN is factory set to 0000 and can be changed after the owner name is entered. We strongly recommend that you enter your own or company's name when the meter is purchased so that it can be identified if lost or misplaced. The Owner name is also used in Expert mode for display in the Main menu and at the top of Farm printouts.

Operation of Setup is identical to that under Quick Mode.

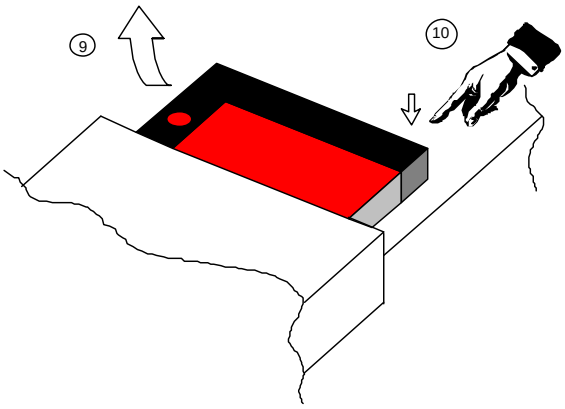
## Using the Printer

The external printer uses standard cash-register paper. It has its own batteries, does not drain DairyTest and will automatically turn off if not used after 5 minutes. The printer can be charged using 9 to 12V DC or by using the DairyTest charger. There is no low-battery indicator on the printer.

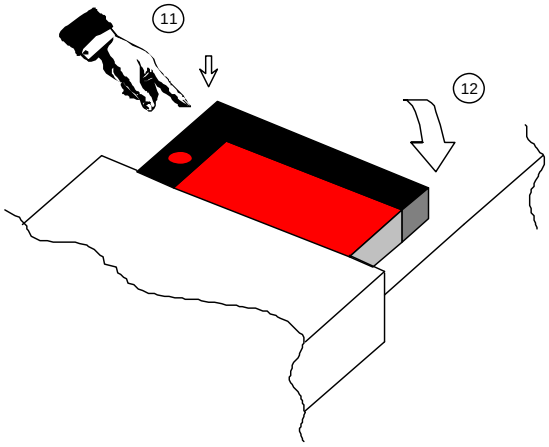
Generally it is quicker to leave the printer unplugged whilst testing, saving readings to memory. At the completion of testing, plug the printer in and do a “Print Farm”.

1. Power indicator.
2. Paper feed.
3. Power ON.
4. Power OFF.
5. Paper.
6. Ribbon.
7. Printer socket.
8. Charger.
9. Lift up.
10. Press.
11. Press.
12. Push down.

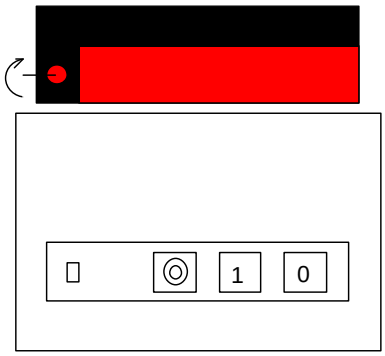
### Removing Ribbon



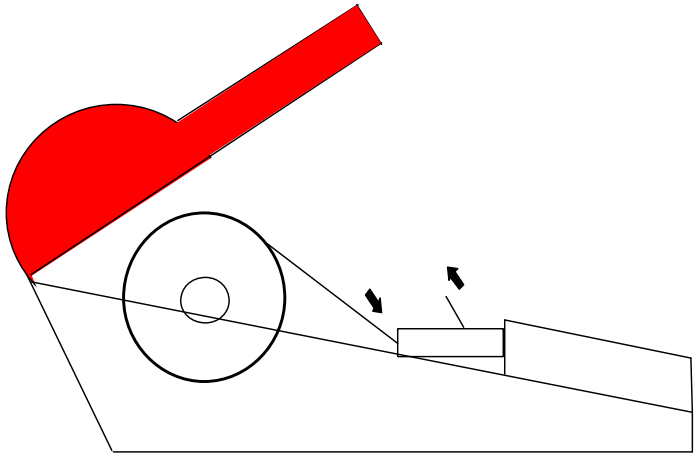

### Replacing Ribbon



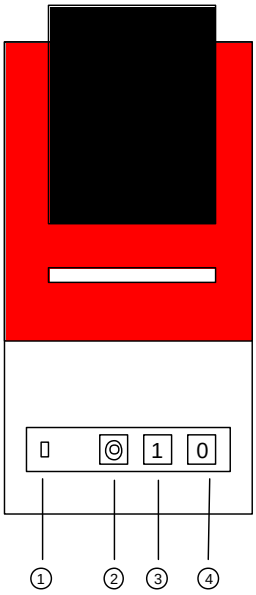

### Tighten Ribbon

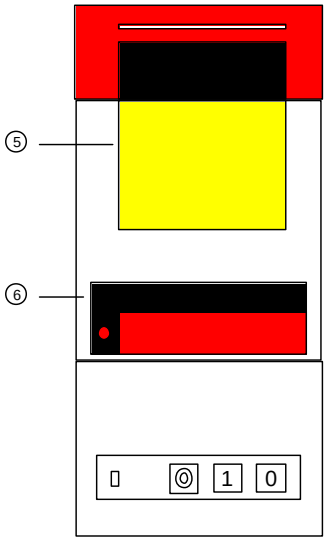



### Paper Path

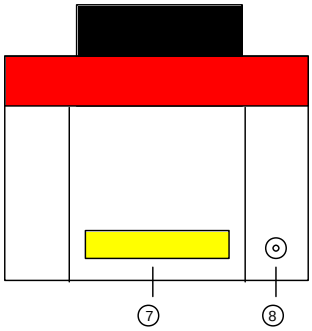


# 68 – DairyTest Professional




Rear View

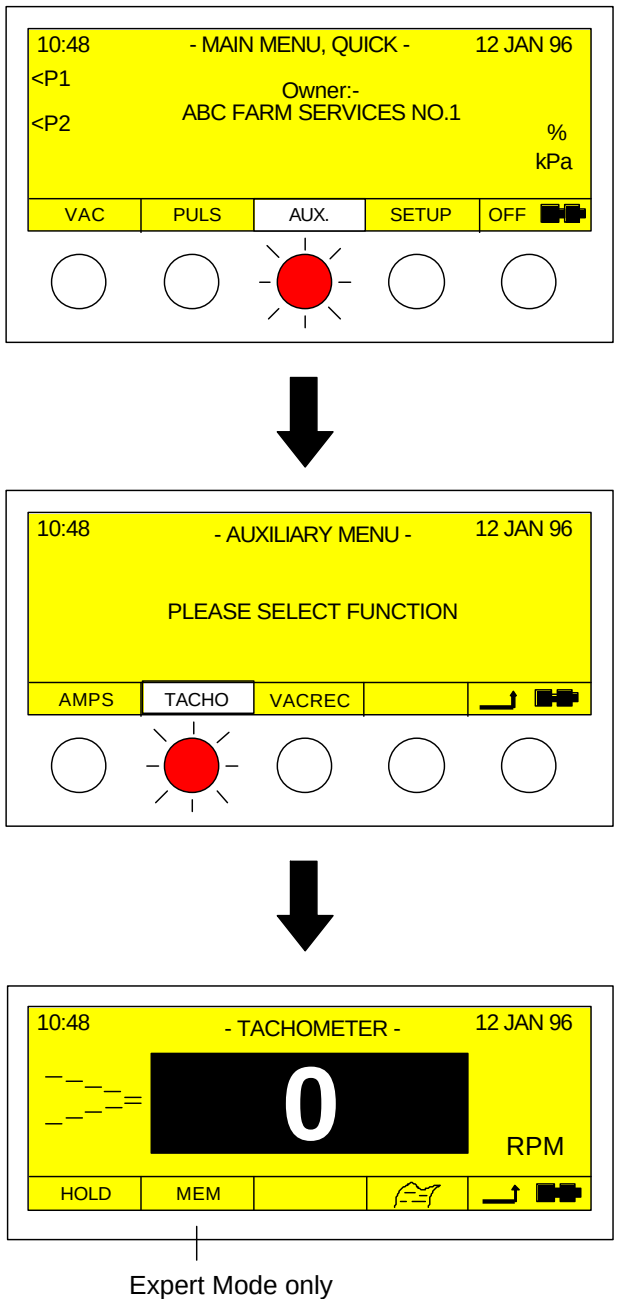


## Using the Tachometer

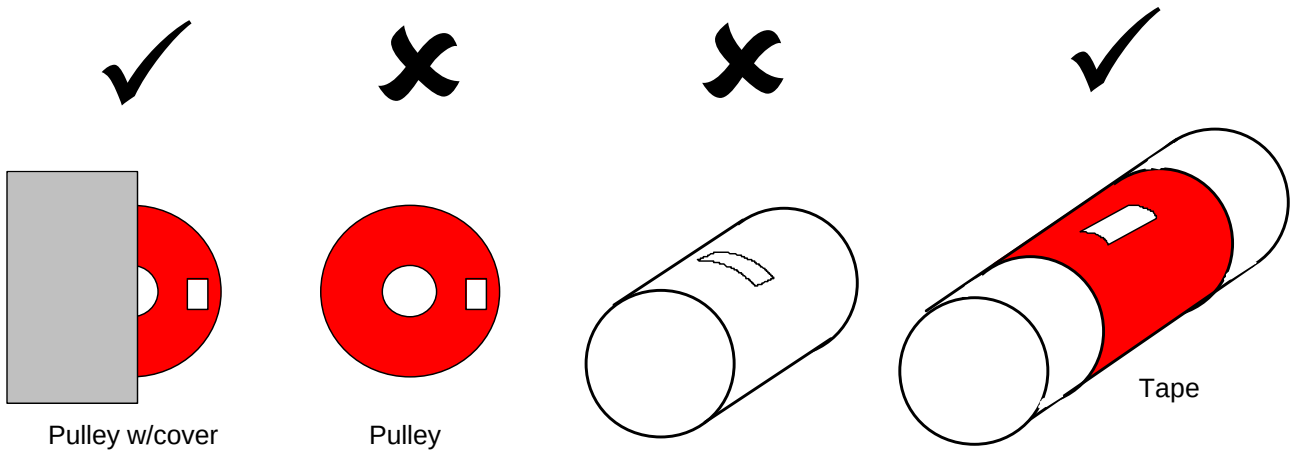
The in-built Tachometer is a non-contact infra-red type which is safe, accurate and easy to use.

Tachometer mode is found under the Auxiliary menu for both Quick and Expert modes. Expert mode allows 4 readings to be stored in memory.

The Tacho uses infra-red light and reflective tape to measure the RPM of the rotating shaft. The reflective tape must be placed on the shaft before measurements can be made. Clean and dry the surface of the shaft/coupling and place a length of tape as shown. Ensure there is good contrast between the tape and the shaft - on very shiny or polished shafts, wrap a piece of dark tape around shaft before applying the reflective tape. Do not place reflective tape on the side of a pulley unless the tape disappears from view as the shaft rotates.




Expert Mode only



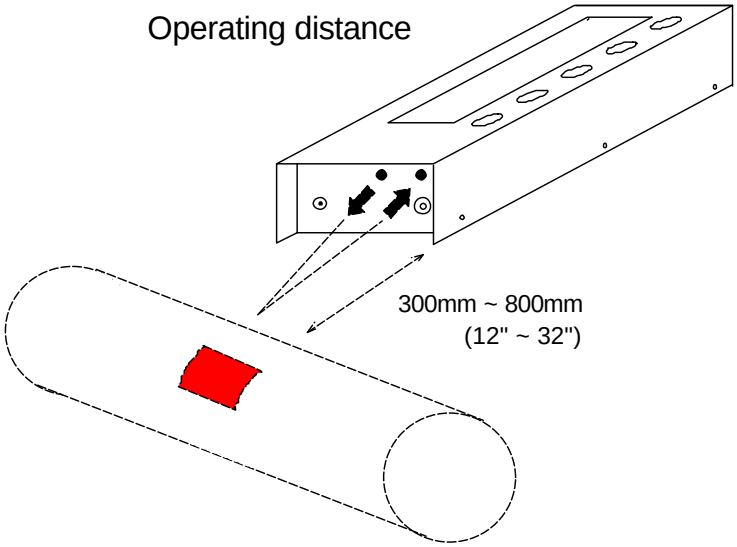

Pulley w/cover

Pulley

# 70 – DairyTest Professional

## Using the Tachometer (cont.)

Operating distance



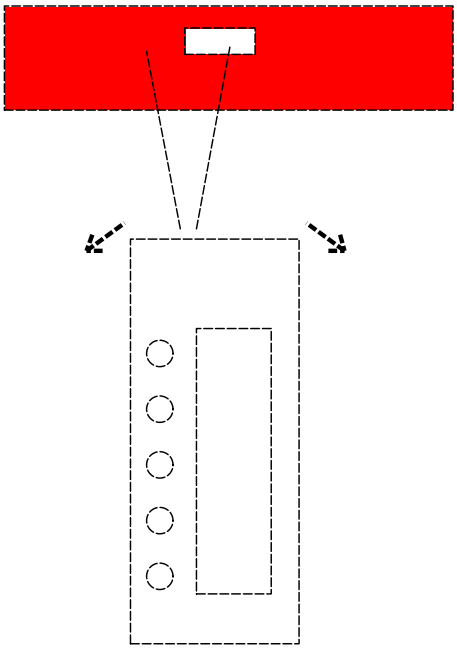

Make sure reflective tape is clean before taking a measurement.

Point end of meter at reflective tape on shaft and move meter until signal gauge shows 4 or 5 bars and reading is stable. Best results are achieved by holding DairyTest about **500mm** (20 inches) away from the tape. Press HOLD to keep currently displayed reading, GO to re-start measurements.

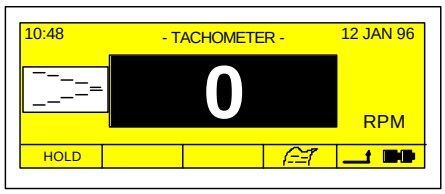
Vary the angle of DairyTest until a good signal is achieved.

Do not hold DairyTest too close to the shaft.

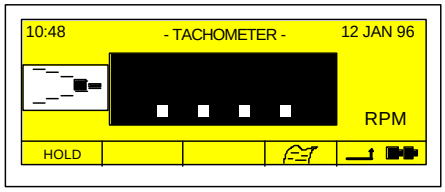
Adjusting Angle



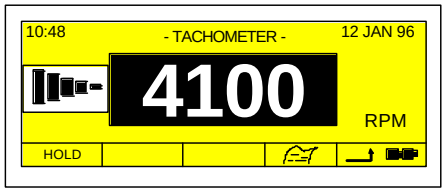
SIGNAL

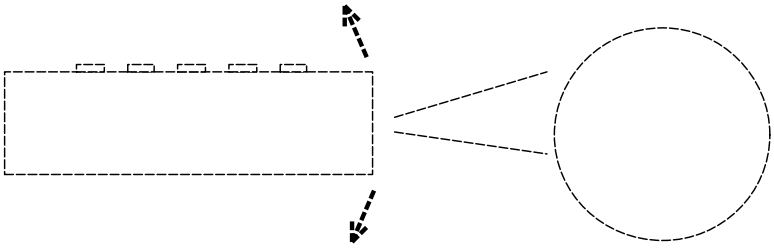



SIGNAL




SIGNAL



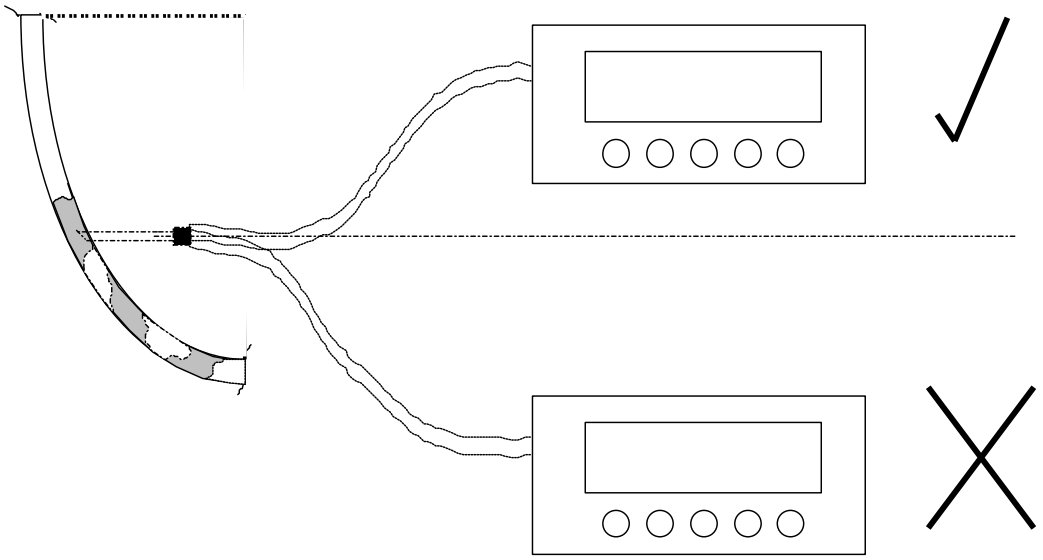
## Wet Testing and Port Calibration

To ensure accurate vacuum readings at all times, DairyTest contains a valve system which allows it to calibrate the internal vacuum sensors for changes in atmospheric pressure and temperature. The process is totally automatic and requires no prompting from you. (You can listen for DairyTest adjusting itself - it makes a whirring/buzzing sound).

The same valve system is also used to back-flush the hoses by opening the ports to atmospheric pressure, thus clearing small amounts of fluid which may build up if testing during milking. By using this technique to clear the lines, the need for external filters or fluid traps in the port lines is, in most cases, eliminated.

When wet testing, it is recommended that DairyTest be kept above the level of the entry point into the milk tube to prevent fluid running back down the hoses when flushing.

### Wet testing using needle etc. (Fig. 1)



# 72 – DairyTest Professional

## If you have problems

### Nothing on the display

Probably flat batteries - Try plugging in the charger.

### Display is hard to read

Try adjusting the LCD contrast - See ‘Changing Date, Time, Keybeep and Contrast’.

### Nothing happens when the charger is plugged in

Check that you have turned power on at the mains and the charger is set to 12V.

### DairyTest makes a funny buzzing noise when the charger is plugged in

DairyTest discharges the batteries before charging them (see ‘Using the charger’) by turning on the internal servo valve. The servo is turned off when the batteries are discharged and charging begins. The noise is the servo operating and is normal.

### Can’t test when the charger is plugged in

DairyTest cannot take measurements whilst discharging. Wait until charging starts or press ‘BOOST’.

### Batteries don’t last

Aviod using the ‘BOOST’ function. If the batteries are constantly topped-up without being discharged, they won’t recharge fully - this is called the ‘memory effect’.

When the charger is plugged in, DairyTest automatically discharges the batteries before recharging to reduce the ‘memory effect’, but constant use of ‘BOOST’ overrides the normal discharge mode.

To erase this ‘memory’, use DairyTest until the batteries are flat and then recharge without using ‘BOOST’. (See ‘Using the Charger’ at the beginning of this manual).

### The port indicators (**P1** or **P2**) keep swapping to reverse (ie. **P1** or **P2**)

**P1** or **P2** will be drawn in reverse if the pulsation is unstable (any value is more than 5% different from the average). Wait until the port indicator is drawn normally before saving or printing the readings. If the reverse does not clear it is likely that the pulsator has a problem.

### ‘INTERNAL ERROR XXX’ shown on display

DairyTest has detected a fault and is not operating to specification - return unit to your supplier for repair.

## If you can’t solve the problem

## Contact us - We’re here to help!

## 74 – DairyTest Professional

# FCC Compliance Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

# Declaration of Conformity

**Application of Council Directives:**

- 89/336/EEC
- 93/68/EEC

**Standards to which Conformity is Declared:**

- EN55011:1991
- EN50082-1:1992
- IEC 801-2:1991 Immunity to Electrostatic Discharges
- IEC801-3:1984 Immunity to Radiated Fields

**Manufacturer's Name:** InnovAg Pty. Ltd.

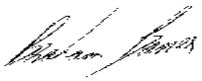
**Manufacturer's Address:** 82 Victoria St.
Sandringham
Victoria 3191
Australia

**Type of Equipment:** Pulsation Tester/ Vacuum Gauge

**Brand Name:** DairyTest Professional

**Model Number:** DR40-0042

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directives and Standards.

Signature  Date: 30 June 1998

Braham Basser
Director
InnovAg Pty. Ltd.

# DairyTest Professional - 75

## Specifications

### Pulsation:

CPM Range: 40 to 500.

CPM accuracy: ± 2%.

Ratio (A%, B%, C%, D%, A+B%) accuracy: ± 2% of reading.

Dtime accuracy: ± 2%.

Sample rate: 300 Hz.

### Pressure:

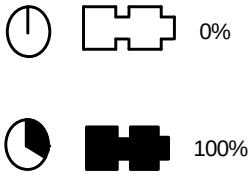
Range: +10 to -80 kPa

Accuracy: ± 0.5 kPa

Repeatability: ± 0.3 kPa

Resolution: 0.1kPa

### Charging :




### Tachometer:

Range: 0 to 5000 RPM

Accuracy: ± 1% Full Scale (when correctly aligned)

Resolution: 1 RPM

### Vacuum Recorder -

Timebase sec (sample rate Hz): 1.5 (300), 3.0 (300), 15 (30), 30 (15), 60 (5)

### Memory:

Total Memories: 420

Number of Farms 200

Maximum Stalls per Farm: 99

Memories per Stall: 2 (A & B)

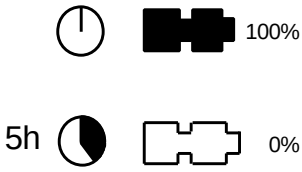
Vacuum Memories per Farm: 10

Ammeter Memories per Farm: 6

Tachometer Memories per Farm: 4

Vacuum Recordings per Farm: 1 (Max. 21 memories per recording)

### Battery Life:




### General:

Operating Temperature: 5 to 40°C

Storage Temperature: 0 to 60°C

Automatic turn-off time: 20 minutes after last keypress with no vacuum on ports.

# 76 – DairyTest Professional

Specifications are subject to change without notice.