

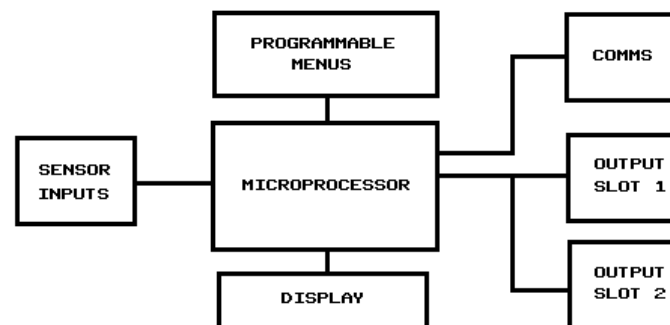
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# USER GUIDE

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## 4.0 PROGRAMMING THE INSTRUMENT

The unit is a microprocessor based instrument which enables it to satisfy a wide variety of applications through re-programming. The diagram below shows schematically, the operation of the instrument.



The programming of the instrument is central to its operation, effecting the way the inputs are processed, how the outputs are handled and what is displayed.

This section is divided into two parts, the first is a tutorial guide to show how to use the programming menus, the second documents the complete menu contents.

## 4.1 PROGRAMMING TUTORIAL GUIDE

Before starting with the Tutorial, it is useful to understand that the unit has three operating modes. These are :-

### DISPLAY PROCESS VARIABLE MODE

### MENU MODE

### EDIT MODE



















**THE DISPLAY PROCESS VARIABLE MODE** is the principal mode of operation. From here, the Process Variable is displayed and all other modes are accessed. The unit will always time-out back to this mode from any other mode of operation.

**THE MENU MODE** gives the user access to the programmable parameters within the unit. It is called a Menu Mode because the parameters are arranged in lists according to their type.

**THE EDIT MODE** is entered into from the Menu Mode and allows the user to inspect or modify a parameter value.

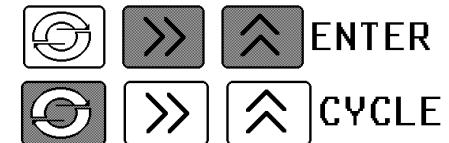
## 4.1.1 KEY DEFINITIONS

All programming is done using the three front panel keys. How these keys are used to program the instrument is shown in this tutorial. The functions of the keys are summarised as follows. The black symbols indicate the keys to press. Shaded keys indicate that the keys should be pressed simultaneously.

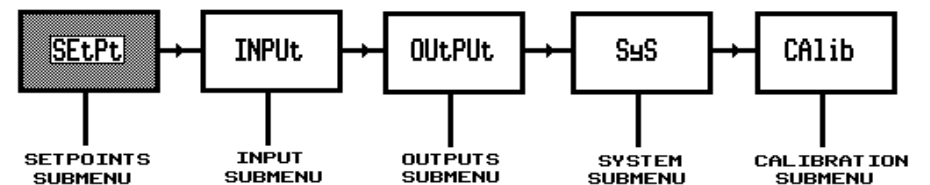
			<b>CYCLE</b>
			<b>SHIFT</b>
			<b>INC</b>
			<b>ESCAPE</b>
			<b>ENTER</b>
			<b>CLEAR</b>

## 4.1.2 GETTING INTO MENU MODE

The Menu mode is accessed from the Display PV mode by pressing the following sequence of keys.



The display will now show SETPt. In order to understand what this means, the following diagram shows where we are within the basic or Root menu structure.



### 4.1.2.1 MOVING AROUND THE MENU

We can browse through the other items in the Root menu by pressing



Subsequent presses of Cycle moves the menu position from right to left on the previous diagram of the root menu. Notice that after reaching CALIB, the menu position wraps around to the start. This principle of menu operation is applied throughout the system.

### 4.1.2.2 GETTING INTO A SUBMENU

Up to now we have simply moved within the Root menu, in order to get into a submenu, we must first cycle around the Root menu until the required submenu is displayed.

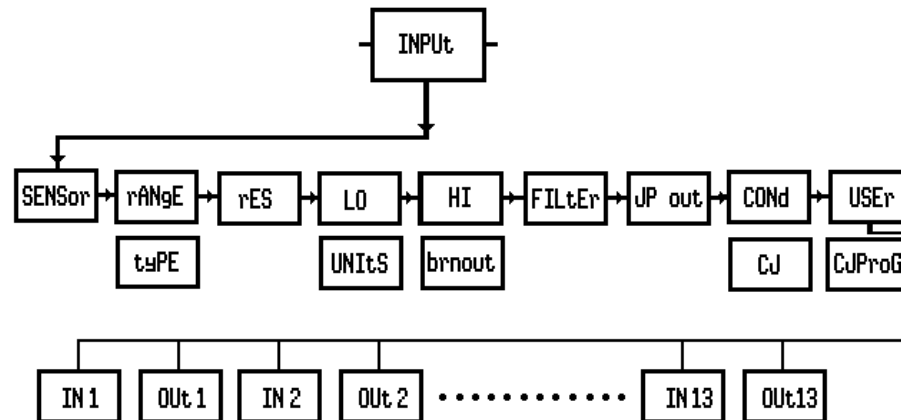
For the purposes of this tutorial press the CYCLE key until InPut is displayed.



In order to get into the INPUT menu simply press the SHIFT key.






SENsOr will now be displayed; we are now in the Input submenu. The diagram below shows our position in relation to other items in the menu.



As before, pressing the CYCLE moves the menu position from left to right, wrapping around at the end. Do not worry if the contents of the menu as shown above is not exactly as you find; the unit alters items in the menu list depending upon settings made.




### 4.1.3 EDITING A PARAMETER

Although the items displayed in the menu can either be submenus or parameters, most of the items in the Inputs menu are parameters. This means that they can be edited.

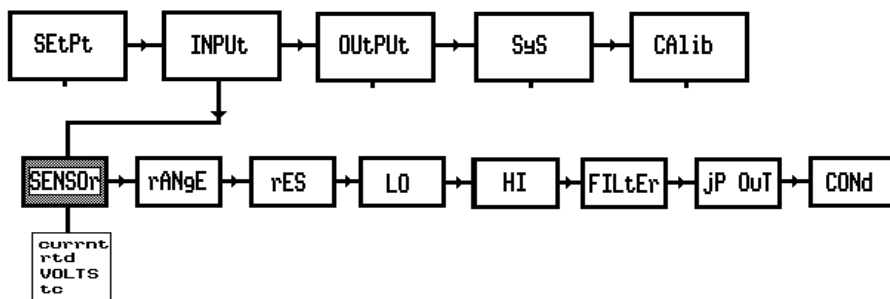
Press the **CYCLE** key until **SENSor** is displayed,    **CYCLE**

and then press **SHIFT**.    **SHIFT**

We are now in **EDIT** mode. This mode is indicated by a flashing display. The display shows the contents of the parameter being edited. The flashing entry is most likely to be **currnt**. This means that the Input sensor type was previously set to monitor current inputs.

This item is changed by pressing the **INC** key.    **INC**

The choice of options available will be found to be as follows:-



INCrement the edit options around until **Volts** is displayed flashing.

Note that whilst the display is flashing, the option on the display has not been saved to memory.

To select an option, the **ENTER** key sequence is used.

Now press **ENTER**.

   **ENTER**

The display will be seen to stop flashing momentarily before returning to Menu mode. Instead of returning back to the **SENSor** entry, **rANgE** will now be displayed. The system has automatically stepped on to the next entry to speed the process of programming.

This method of editing parameters is repeated broadly throughout the menu structure, with the exception of programming number fields which will be dealt with next.

The method of editing a field is a bit different, though as easy as for any other entry. As before, we will see it through an example.

Cycle around the Inputs menu until **Hi** is displayed.




   **CYCLE**

This is the engineering high range value, although its function is unimportant in the tutorial, it simply provides a numeric field to edit.

As before pressing **SHIFT** takes us into the edit mode.

   **SHIFT**

The value on the display will have its most significant digit flashing and represents the value previously entered for the engineering units high range.

As before, the **INC** key modifies the editable value, but this time, this will only be the digit flashing. This digit is said to be under the edit cursor.    **INC**

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To move the edit cursor, press the



SHIFT key. The edit cursor moves one digit to the right. If the SHIFT key is repeatedly pressed, the edit cursor will be seen to wrap around to the most significant digit once more.

Therefore it can be seen how a number may be programmed in this field by selective use of the INC and SHIFT keys. We could enter the edited value as done in the previous example, but for the purposes of this tutorial we shall abandon the edit.

This is done using the ESCAPE key



sequence. Pressing this returns us to the MENU mode, showing **Filter**, the next item in the Input menu.

We could go on and program other items within this or other menus using the same principles as we have done in the previous examples. Instead, we shall return to the Root menu, and then back to the DISPLAY PV mode.

#### 4.1.4 RETURNING FROM SUBMENUS

It has been shown that the method of getting into a submenu is pressing the SHIFT key on a submenu item. The reverse operation is to press the ESCAPE key.

This may be done anywhere in a menu. Pressing the ESCAPE key from our current position in the Inputs menu takes us back to the Root menu.



**OUtPUt** will now be displayed, as the menu position has automatically stepped on to the menu item.

The Root menu, as its name suggests is not a submenu. Pressing the ESCAPE key sequence whilst in the Root menu will take the user out of MENU mode and into the DISPLAY PV mode. Thus the monitored process variable will be shown on the display.

Note that escaping to DISPLAY PV mode saves all programmed data to non-volatile memory, retaining it during switch off.