ProCASE II™

Programming Manual

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Introduction

ProCASE II™ is an electronic measurement system used to assist in the setup of industrial production equipment. The measurement system can be installed on many types of equipment such as boring machines, molders, tenoners, lathes, saws that require repeated setup of multiple axes.

Each axis on the machine that requires monitoring is fitted with an Accurate Technology ProScale™ (or other supported encoder) that continually monitors the location of the axis. The system can then be configured to display the current position of a particular axis or can be used to record the current position of all the active axes. These recorded positions can be recalled at a later time and used to quickly reposition the machine to reproduce the desired setup.

The primary purpose of this manual is to define and illustrate the programming options and capabilities of the ProCASE II. It is ***strongly*** recommended that the ProCASE II User Manual be reviewed prior to beginning this manual. The ProCASE II User Manual describes system fundamentals regarding system architecture and use.

This manual assumes the reader already has an understanding of the general system operation, the use of the hand-held Pendant menus and *soft keys.*

Configuration Programming

Configuration programming for the ProCASE II is divided into two general categories. The first is **axis** programming and the second is **system** programming. Configuration programming is completed using a menu architecture similar to the menu structure used by the machine operator.

Access to configuration programming is completed via the SYSTEM CONFIGURATION menu shown below. This menu is part of the top level menu system and is accessed by scrolling (using the up and down arrow keys).

```
 SYSTEM CONFIGURATION


SELECT
```

After pressing the SELECT (F1) key, the following menu will be displayed:

```
SYSTEM CONFIGURATION
   CHOOSE AN OPTION

OFFSET  AXIS  SYS  LOG
```

Note that the offset option is the **only** selection available if the master log-in code is **not** used when logging in. Using the master code at log-in will allow programming of axis configuration and system configuration, in addition to access to the ProCASE II event log. To select a desired function, press the "F" key below the soft key label.

This menu can be exited by pressing the ESC key on the hand-held pendant. This will return the system to the SYSTEM CONFIGURATION menu.

Axis Programming Description

Axis programming is used to configure each axis of the system. Every axis can be independently programmed with a multitude of features, allowing full customization of each ProCASE II system. The list below describes each axis configuration field, and provides a brief explanation of each.

Axis Name - A descriptive name used to identify the axis. The axis name can consist of up to 20 characters and can be composed of letters or numbers.

Axis Enabled - Signifies to the system if the axis is enabled or disabled. An axis that is enabled is polled for position data and is monitored for drift conditions while in the RUN mode. Axes that are disabled are ignored by the system although their configuration data remains active. Any axis that is to be used by the system **must** be enabled for proper operation. (Any axis can be disabled in the case of an encoder failure or other problem related to the axis.) **Valid entries: 0 or 1.**

Axis Type - Indicates to the ProCASE II which type of position encoder is being used on the axis. Axis types are identified by the following values:

1. *Manual Axis.* No electronic encoder on the axis. The axis may use a scale or other mechanical position display device. The ProCASE II will provide a location in each setup file for the position of a manual axis to be recorded for a setup.

2. *ProScale Absolute* Linear Position Encoder. This is the standard position encoder used by the ProCASE II. It provides position information to the system and maintains this data even after power is removed. (Used for **most** ProCASE installations)

3. *ProScale* Incremental Linear Position Encoder. This is a linear encoder similar to the ProScale absolute model with the exception that it DOES NOT maintain its position when power is removed. (Not recommended.)

4. *Accustar* Angular Displacement Encoder. This encoder is used to measure the angular displacement (in degrees) of an axis which rotates about a horizontal pivot point. It has a resolution of ½ degree with a range of +/- 45 degrees.

Use one of the four values shown above for the Axis Type field. **Valid entries: 1 to 4.**

Module Port - This field is used to specify which of the eight encoder ports this axis is connected to. Port numbers are from 1 to 8 with port 1 on the left most side viewing the ProCASE II module from the top. (Same side as the network connection port, on the opposite end of the module.) **Valid entries: 1 - 8.**

Module Number - Indicates which module in the system the axis is connected to. The Master module (identified by the power input terminal) is module 1. Additional satellite modules can be added to the system and are identified as modules 2 through 6. Enter the module number to which this axis is connected. **Valid entries: 1 - 6.**

Axis Scale Factor - Specifies a multiplier to be used by the axis prior to display of its position. This field can be any value greater than 0 and will be directly multiplied with the reporting position of the axis encoder. A typical use for this field is to correct for the reading of an axis in which two sides of a machine move on a single screw but only one side incorporates an encoder. In this case, the actual position is *twice* the distance being reported by the encoder. Additionally, this field can include values less than 1.0 to divide the value being reported by the encoder. This can be used when measuring angular displacement via a linear encoder. The result is a value that represents fractional linear inches per degree of motion. The default value is 1.00 which results in the direct encoder position value being used. **Valid entries: Greater than 0.0**.

Axis Home Offset - This field represents an offset used when displaying the axis position from a specified calibration point. This field is used internally by the ProCASE II and is **not** editable from the axis configuration editor. (Use the OFFSET selection in the SYSTEM CONFIGURATION menu to modify the home offset.)

Axis Drift Tolerance - Indicates to the system the amount of axis **motion** allowed while the ProCASE II is in RUN mode. If the axis drifts beyond this tolerance, the system will enunciate an error and require that the axis be repositioned. **Valid entries: Greater than 0.0.**

Position Tolerance - Specifies the required accuracy of **positioning** the axis when recalling a previously saved setup file. The ProCASE II will force the user to position the axis to within this specified tolerance before allowing the next axis to be positioned. If the event of a drift condition while in RUN mode, the axis must be re-positioned to this tolerance before leaving the REPOSITION AXIS menu. NOTE: If the SKIP feature is enabled, an axis can be skipped without positioning it during a setup. If an axis is skipped, the position of the axis will not be monitored during RUN mode. **Valid entries: Greater than 0.0.**

Encoder Dir - Modifies the sign (positive or negative) of the axis encoder. If the encoder is displaying a negative position in a positive direction of travel, toggle this value from its current state. **Valid entries: 0 or 1.**

Encoder Units - Indicates if the encoder is to display position information in the form of linear units (inches or millimeters) or in degrees. This can be used to display degrees of rotation while using a linear encoder device.
Valid entries: 0 = Linear 1 = Degrees.

The following page illustrates each menu in the axis configuration editor with a brief description of each display screen.

AXIS CONFIGURATION Menu

The following illustrate the axis configuration editor. This editor is accessed by pressing the AXIS (F2) key from the SYSTEM CONFIGURATION menu. The up and down arrow keys are used to navigate through this editor.

```
EDIT AXIS CFG FILE
ENTER AXIS NUMBER

SELECT
```

Enter the axis number to be configured and press SELECT (F1). This option moves the user to the axis configuration editor for the selected axis. Pressing ESC (on the Pendant) will return the user to the SYSTEM CONFIGURATION menu.

```
AXIS 1
AXIS NAME
AXIS 1
```

AXIS 1 on the third line of the display is the default AXIS NAME. (This menu uses the alphanumeric programming method to program the axis name.)

```
AXIS 1
AXIS ENABLED 1=YES
```

The system requires an axis to be enabled in order to be recognized. The default value for all axes except axis 1 is 0 (0 = NOT ENABLED). Changing the value to a 1 enables the axis.

```
AXIS 1
AXIS TYPES (SEE DOC)
2
```

The default axis type for all axes is the ProScale*ABS* encoder. The axis types are as follows: 1 = Manual axis, 2 = ProScale*ABS*, 3 = ProScale (incremental), 4 = Accustar.

```
AXIS 1
MODULE PORT  1-8
1
```

This value is the module port number where the axis is plugged into. The range of this value is 1-8.

```
AXIS 1
MODULE NUMBER  1-6
1
```

This value is the module number into which the axis encoder is plugged. The Master module is always 1. The range of this value is 1-6.

```
AXIS 1
AXIS SCALE FACTOR
1.000
```

This value is the axis scale factor of the axis encoder. The default value for all axes is 1.000.

```
        AXIS 1
  AXIS HOME OFFSET
        0.000
```

This value represents an offset used to display the current position of the axis from a specified calibration point. This field is not editable from the axis configuration editor.

```
        AXIS 1
 AXIS DRIFT TOLERANCE
        0.010
```

This value is the distance the axis is allowed to move before the system reports an "OUT OF POSITION" error while in RUN mode.

```
        AXIS 1
 POSITION TOLERANCE
        0.005
```

This tolerance is used while positioning the axis after recalling a previously stored setup file. The axis must be adjusted to the specified position (plus or minus) this tolerance.

```
        AXIS 1
  ENCODER DIR 0/1
          0
```

This field is used to change the (sign, positive or negative) direction of the encoder position. If the encoder is displaying a position opposite to the direction of travel, toggle the value of this field.

```
        AXIS 1
 ENCODER UNITS 0/1
          0
```

This field is use to indicate if the axis is to display its position data in linear units (inches or millimeters) or in angular degrees. 0 = Linear 1 = Degrees.

System Configuration Description

The system configuration programming for the ProCASE II consists of a menu system similar to the top level menu in the user operated portion of the system. It incorporates a series of menus that can be navigated through using the up and down arrow keys. (An illustration of the menu system can be found on page 13 with a brief description of each menu.) The list below describes each system configuration field and provides a brief explanation of each.

Edit System Params - Includes the main system parameters that control the overall operation of the system. The next section describes in detail each field in the system parameters editor and valid entry values.

Edit Passwords - Allows the master and user passwords to be entered into the system. Up to 8 passwords can be used in the ProCASE II.

Change Time and Date - Allows modification of the on-board real-time clock and calendar.

Edit Inputs/Outputs - Provides the mapping facility to associate system functions with input and output control.

Edit Module Address - Used to set network address values for each module in the system.

Set System Defaults - Allows specific non-volatile areas of memory to be reset to the factory default values.

To enter into a particular programming menu, press the SELECT (F1) key. A series of menus will be provided to complete the desired programming function. To exit the specific programming area, press the ESC key to return to the main SYSTEM CONFIGURATION menu structure. Press ESC again to return to the SYSTEM CONFIGURATION menu.

SYSTEM CONFIGURATION Menu

The SYSTEM CONFIGURATION Programming sub-menu system is selected by pressing SYSM (F3) from the SYSTEM CONFIGURATION menu.

EDIT SYSTEM PARAM **SELECT**	Pressing SELECT (F1) will move the user to the EDIT SYSTEM PARAMETERS editor. Pressing ESC will return the user to the previous menu.

EDIT PASSWORDS **SELECT**	Pressing SELECT (F1) will move the user to the EDIT PASSWORDS menu. Pressing ESC will return the user to the previous menu.

CHANGE TIME AND DATE **SELECT**	Pressing SELECT (F1) will move the user to the CHANGE TIME AND DATE menu. Pressing ESC will return the user to the previous menu.

EDIT INPUTS/OUTPUTS **SELECT**	Pressing SELECT (F1) will move the user to the EDIT INPUT AND OUTPUTS menu. Pressing ESC will return the user to the previous menu.

EDIT MODULE ADDRESS **SELECT**	Pressing SELECT (F1) will move the user to the EDIT MODULE ADDRESS menu. Pressing ESC will return the user to the previous menu.

SET SYSTEM DEFAULTS **SELECT**	Pressing SELECT (F1) will move the user to the EDIT SYSTEM DEFAULTS menu. Pressing ESC will return the user to the previous menu.

System Parameter Description

This section describes the each field in the SYSTEM PARAMETERS CONFIGURATION editor and provides a range of valid values for each.

Max Axes - Indicates the number of axes currently programmed in the system. This includes **both** active and disabled axes. **Valid entries: 1 to 48.**

Sys Units - Sets the current linear units mode to either inches or millimeters. 0 = inches, 1 = millimeters. **Note:** It is important that the choice of system units be made **before** setup files are stored. Setup values are stored based on the linear units configured at the time of the file save. If the system units are then changed, the values stored in the setup files will be misinterpreted by the system. **Valid entries: 0 or 1.**

Use Notepad - Enables or disables the use of the setup notepad for file storage. If the value is 0, the notepad editor will **not** be used when saving or retrieving a setup file. If the value is 1, the notepad editor will be used. The default is 1 (USE). **Valid entries: 0 or 1**.

Use Axis Skip - Enables or disables the use of the axis skip mode. If enabled, an axis can be skipped while reproducing a setup from a saved file. This can be used to skip a particular axis that is not used in a specific setup file. If an axis is skipped, the system will **not** report drift errors while the system is in the RUN mode. The default value is 0 (NOT USED). **Valid entries: 0 or 1.**

Date Fmt - Sets the date format to be used for the event log. A value of 0 uses MM/DD/YY format, a value of 1 uses DD/MM/YY format**. Valid entries: 0 or 1.**

Part Cnt Match - Indicates if the part count match functionality is to be enabled. If an input is configured for part counting, the system will increment a part counter for every activation of the switch. If PART CNT MATCH is also enabled, the system will provide the user with the ability to enter a *target* number of parts to produce. When the target number of parts match the internal part counter (incremented by the switch), an output is activated to indicate to the user that the target number of parts have been produced. **Valid entries: 0 or 1.**

The remainder of the System Parameters selection deals with the top level menu. The ProCASE II provides a method to "lock out" individual top level user menus and thus prevent their functionality. If the value for an "ENABLED MENU" field is 1, the menu is enabled and provides normal operation. If the field is 0, the menu is disabled and will **not** appear in the normal system operation. By default, all menus are *enabled.* Note: The SYSTEM CONFIGURATION menu can **not** be disabled. **Valid entries: 0 or 1**.

Edit System Parameters

SYSTEM CONFIGURATION **MAX AXES 1-48** **1**	Defines the number of axes that are active in the system. The default number is 1. The maximum number of axis the system will accommodate is 48.
SYSTEM CONFIGURATION **SYS UNITS 0 = IN 1 = MM** **0**	Defines the type of measurement used by the system. 0 equals inches and 1 equals millimeters. Inches are the default measurement type.
SYSTEM CONFIGURATION **USE NOTEPAD 1=YES** **1**	Defines use of the notepad feature when saving setups. One equals YES and zero equals NO. The default value is 1.
SYSTEM CONFIGURATION **USE AXIS SKIP 1=YES** **0**	Defines use of AXIS SKIP feature. The axis skip feature allows the user to skip the positioning of axes while recalling a previously saved setup file.
SYSTEM CONFIGURATION **DATE FMT 0=MM/DD/YY** **0**	Defines the format the date is displayed. Zero (0) equal Month/Day/Year. One equals Day/Month/Year.
SYSTEM CONFIGURATION **PART CNT MATCH 1 = YES** **1**	Indicates that the PART COUNT MATCH feature is enabled in the system. An input must be defined for part counting for this function to be active.
SYSTEM CONFIGURATION **ENABLE LOGIN 1=YES** **1**	Enables the LOGIN feature, which allows for multiple users. If the LOGIN feature is disabled, the system is configured for a single user. The default value is 1, LOGIN enabled.
SYSTEM CONFIGURATION **ENABLE FILES 1=YES** **1**	Enables the SELECT FILES menu in the top level menu. The default value is 1, SELECT FILES menu enabled.
SYSTEM CONFIGURATION **ENABLE MANUAL 1=YES** **1**	Enables the MANUAL POSITION menu in the top level menu. The default value is 1, MANUAL POSITION menu enabled.

```
┌─────────────────────────────┐
│ SYSTEM CONFIGURATION        │
│ ENABLE HOMING     1=YES     │
│            1                │
│                             │
└─────────────────────────────┘
```
Enables the HOMING menu in the top level menu. The default value is 1, HOMING menu enabled.

```
┌─────────────────────────────┐
│ SYSTEM CONFIGURATION        │
│ ENABLE RUN        1=YES     │
│            1                │
└─────────────────────────────┘
```
Enables the RUN menu in the top level menu. The default value is 1, RUN menu enabled.

```
┌─────────────────────────────┐
│ SYSTEM CONFIGURATION        │
│ ENABLE ERRORS   1=YES       │
│            1                │
└─────────────────────────────┘
```
Enables the DISPLAY ALL ERRORS menu in the top level menu. The default value is 1, DISPLAY ALL ERRORS menu enabled.

```
┌─────────────────────────────┐
│ SYSTEM CONFIGURATION        │
│ ENABLE CONFIG    1=YES      │
│            1                │
└─────────────────────────────┘
```
Enables the SYSTEM CONFIGURATION menu in the top level menu. The default value is 1, SYSTEM CONFIGURATION menu enabled. Note: This field is **not** editable. The system configuration menu can **not** be disabled.

EDIT PASSWORD Menu

This option moves the user to the EDIT PASSWORD menu. The up and down arrow keys are used to navigate through this menu. This menu allows programming of the master password and the 7 user passwords.

```
MASTER PASSWORD
           1234

          STORE
```

Enter a new Master Password and press Store (F4). Pressing Store (F4) will store the new Master Password. Pressing ESC will return to the previous menu.

```
USER 1 PASSWORD



          STORE
```

Enter a new User 1 Password and press Store (F4). Pressing Store (F4) will store the new User 1 Password. Pressing ESC will return to the previous menu.

```
USER 2  PASSWORD



          STORE
```

Enter a new User 2 Password and press Store (F4). Pressing Store (F4) will store the new User 2 Password. Pressing ESC will return to the previous menu.

Any additional passwords are programmed as described above. Note that when a user logs into the system, an event is stored showing the log-in with the time and date. The user ID is stored in the event, **not** the actual password. It is important to associate a user ID in the event log with a password. ID 1 is the master password, ID 2 is USER 1, ID 3 is USER 2, etc.

Change Time and Date

This menu allows for programming of the time and date. The ProCASE II has a battery backed real time clock/calendar that is used when saving events to the system event log. It is **important** that the time and date be set correctly so that the event log can accurately record user and system operations.

```
 CHANGE TIME AND DATE



TIME  DATE           DONE
```

Press TIME (F1) to change the system's time. Press DATE (F2) to set the system's date. Press DONE (F4) to return to the previous menu.

```
 08:45          05/30/97
        ENTER NEW

UPDATE
```

The time to be entered is expected to be in 24 hour format (4:21PM is 1621). A valid time entry **must** consist of 4 characters. For example, 9:54AM would be entered as 0954 (no colon). Press UPDATE to accept the entry. Press ESC to exit back to the previous menu.

```
 08:45          05/30/97
    ENTER NEW DATE

        UPDATE
```

The format for date entry is based on the date format system parameter. If the date system parameter is 0 then the entry is MM/DD/YY, otherwise it is DD/MM/YY. The date must consist of six digits. (Example: March 9, 1997 = 030997.) Press UPDATE to accept the entry. Press ESC to return to the previous menu.

Note that when the UPDATE (F1) key is pressed, the appropriate field (time or date) will be updated to reflect the change. Verify that the time and date are set accurately prior to leaving this menu. Note: The range of the calendar for the system is from 1945 to 2050. The system will account for leap year but does not account for daylight savings time.

Hardware Inputs/Outputs

The ProCASE II provides several input and output functions to allow the system to be interfaced with external switches and annunciation devices (lights). The input/output functionality is implemented using a mapping structure. This concept is illustrated below:
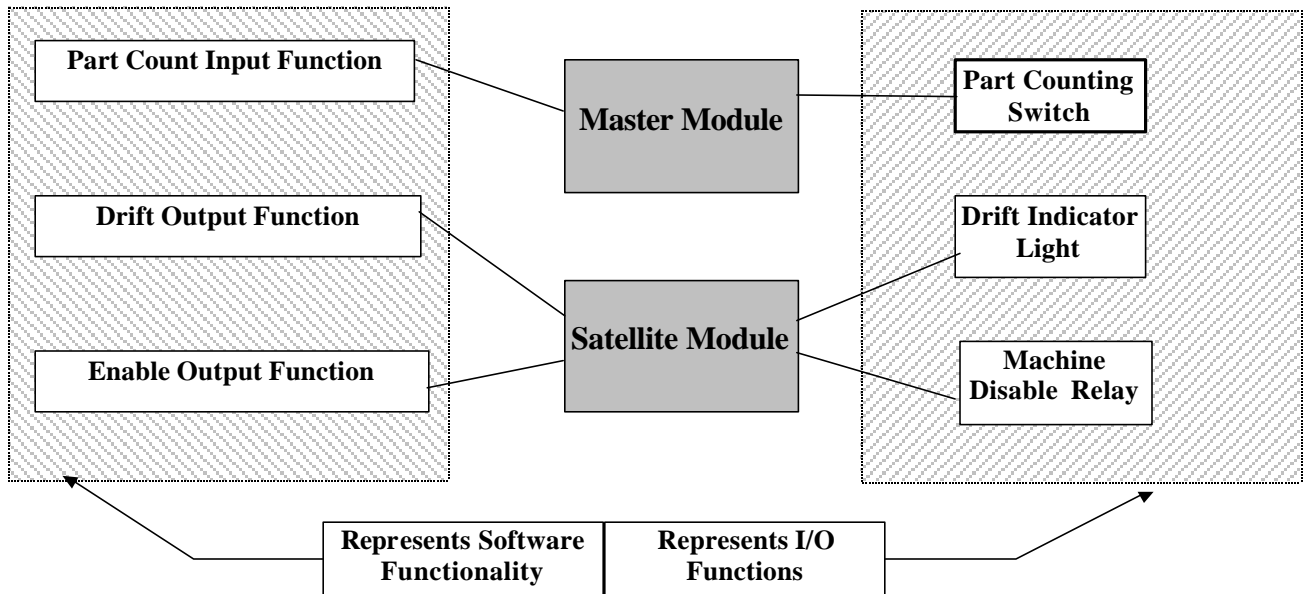
The input and output functions shown above are *mapped* to a particular input or output(s) on a system module. Each module supports two inputs and two outputs. The function of these inputs and outputs are defined via the I/O mapping.

To program the system inputs/outputs, complete the following:

From the CHOOSE INPUT/OUTPUT menu, select INP for inputs or OUT for outputs. The system will provide a menu indicating the available function to choose from.

- INPUTS
  - Part Count Input

- OUTPUTS
  - Drift Output
  - Error Output
  - Enable Output
  - Part Count Match

Use the up and down arrow keys to navigate to the desired function. When the desired function is reached, press the SELECT (F1) key.

The system will show the input or output function description at the top of the screen with the second line indicating the MODULE NUMBER label. The third line is the current module number selected. By default, all inputs and outputs are disabled (0 value). To enable the function, enter a valid module number in this field from 1 to 6. Module 1 is the master, module 2 is the first satellite, etc. Press the UPDATE key to accept the entry for the module number. To disable a function, program the module number with 0 (zero).

After the module number has been entered and the UPDATE key has been pressed, the system queries for the module port input. This represents the port number of the module to be used. Valid entries are 1 or 2. Enter a valid port number and press UPDATE (F1). NOTE: If the function is disabled with a module number of 0, the port number value is irrelevant.

Output functions provide a second set of module and port programming menus to allow a function to be available on two different modules. An example of this would be to have two lights on a machine, both used to indicate a drift condition. If each warning light was located on opposite ends of the machine, the system could be configured to activate two different modules which were closest to each light. This minimizes system wiring and decreases installation time. If the desired output function is to be generated on a second module, repeat the above steps to program the *second* module number and port number. In this case, the module number used in the first step would be **different** from the module number in the second step because two different modules are being selected. The port number can be the same or different since modules are independent of each other. If the output function is **not** to be generated on a second module, program the module number to zero (in the second step) and press UPDATE. The port number can be left as it is.

Input functions provide only one set of module/port settings for programming. The same guidelines are used for inputs as for outputs in that an input is only enabled if a valid module number (greater than 0) is programmed. After programming a valid module number (1 - 6) to enable the function, press the UPDATE (F1) key. Program the module port number to be used and press UPDATE (F1).

The following section provides a menu description of each step used in programming inputs and outputs.

Edit Inputs and Outputs

Allows programming of the system Inputs and Outputs.

CHOOSE INPUT/OUTPUT
INP   OUT

Press INP (F1) to move to the SYSTEM INPUTS menu. Select OUT (F2) to move to the EDIT OUTPUTS menu. Press ESC to return to the previous menu.

- **Edit Inputs**

SYSTEM INPUTS PART COUNT INPUT
SELECT

Allows programming of the system inputs. The INPUT menu only has one entry at this. Press SELECT (F1) to program PART COUNT INPUT. Press ESC to return to the previous menu.

- **Edit Part Count Input**

PART COUNT INPUT MODULE NUMBER 0
UPDATE

Set the PART COUNT INPUT module number. This is the Satellite module that the specified input is attached to. Zero (0) disables the function, 1 - 6 enables the function to the specified module.

PART COUNT INPUT INPUT NUMBER 1
UPDATE

This is the input number on the I/O Module. The range of this value is 1 or 2.

- **Edit Outputs**

The EDIT OUTPUTS menu allows programming of the system outputs. The up and down arrow keys are used to navigate through the menus.

SYSTEM OUTPUTS DRIFT OUTPUT
SELECT

The DRIFT OUTPUT is activated when a monitored axis moves out of position while the system is in the RUN mode. Press SELECT (F1) to program the drift output. Press ESC to return to the previous menu.

SYSTEM OUTPUTS ERROR OUTPUT
SELECT

The ERROR OUTPUT is activated when an error condition exists. Press SELECT (F1) to program the error output. Press ESC to return to the previous menu.

```
┌─────────────────────────┐
│    SYSTEM OUTPUTS       │
│    ENABLE OUTPUT        │
│                         │
│ SELECT                  │
└─────────────────────────┘
```
The ENABLE OUTPUT is activated when a valid user code has been entered into the system and the user is logged in. Press SELECT (F1) to program the enable output. Press ESC to return to the previous menu.

```
┌─────────────────────────┐
│    SYSTEM OUTPUTS       │
│  PART COUNT MATCH       │
│         OUT             │
│ SELECT                  │
└─────────────────────────┘
```
The PART COUNT MATCH OUTPUT is activated when the part count input counter equals the preprogrammed part count value while in RUN mode. Press SELECT (F1) to program the part count match output. Press ESC to return to the previous menu.

▪ **Edit Drift Output**

```
┌─────────────────────────┐
│     DRIFT OUTPUT        │
│   MODULE NUMBER         │
│         0               │
│ UPDATE                  │
└─────────────────────────┘
```
Program the first MODULE NUMBER that the DRIFT OUTPUT is assigned to. Enter the number on line three and press UPDATE (F1) to update the system. Press ESC to return to the previous menu.

```
┌─────────────────────────┐
│     DRIFT OUTPUT        │
│    MODULE PORT          │
│         1               │
│ UPDATE                  │
└─────────────────────────┘
```
Program the MODULE PORT number on the first module that is to be used for the DRIFT OUTPUT. The valid port number range is 1 or 2. Press UPDATE (F1) to store the port. Press ESC to return to the EDIT INPUTS/OUTPUTS menu.

```
┌─────────────────────────┐
│     DRIFT OUTPUT        │
│   MODULE NUMBER         │
│         0               │
│ UPDATE                  │
└─────────────────────────┘
```
Program the second satellite MODULE NUMBER that the DRIFT OUTPUT is assigned to. If no second module is to be programmed, enter a value of 0. Press UPDATE (F1) to update the system. Press ESC to return to the EDIT INPUTS/OUTPUTS menu.

```
┌─────────────────────────┐
│     DRIFT OUTPUT        │
│    MODULE PORT          │
│                         │
│ UPDATE                  │
└─────────────────────────┘
```
Program the MODULE PORT number on the second module that is to be used for the DRIFT OUTPUT. The valid port number range is 1 or 2. Press UPDATE (F1) to store the port. Press ESC to return to the EDIT INPUTS/OUTPUTS menu.

The remainder of the outputs are programmed similar to the DRIFT OUTPUT shown on the previous page. The following is a list of initial menus for each of the other output functions in the system.

- **Edit Error Output**

```
        ERROR OUTPUT
      MODULE NUMBER
             0
UPDATE
```

Program the module number that the Error Output is assigned to. Enter the number on line three and Press UPDATE (F1) to update the system. Continue with the remainder of the programming. Press ESC to return to the EDIT INPUTS/OUTPUTS menu.

- **Edit Enable Output**

```
       ENABLE OUTPUT
      MODULE NUMBER
             0
UPDATE
```

Program the module number that the Enable Output is assigned to. Enter the number on line three and Press UPDATE (F1) to update the system. Continue with the remainder of the programming. Press ESC to return to the EDIT INPUTS/OUTPUTS menu.

- **Edit Part Count Match Output**

```
PART COUNT MATCH OUT
MODULE NUMBER
             0
UPDATE
```

Program the module number that the Drift Output is assigned to. Enter the number on line three and Press UPDATE (F1) to update the system. Continue with the remainder of the programming. Press ESC to return to the EDIT INPUTS/OUTPUTS menu.

Edit Module Address

The EDIT MODULE ADDRESS menu allows for the programming of each module's network address. The system can handle a maximum of six modules. As each module is added to the system, the module's address switch is usually set in the order the modules are added. In the EDIT MODULE ADDRESS menu, each module's address is programmed to match the module's address switch setting. Each module's address is programmed to zero by default and is reprogrammed when a module is added to the system with the exception of module 1, the master module. The up and down arrow keys are used to navigate through the menu.

The recommended address/module relationship is shown below:

Module	Address	
1	1	(Master)
2	2	(Satellite 1)
3	3	(Satellite 2)
4	4	(Satellite 3)
5	5	(Satellite 4)
6	6	(Satellite 5)

```
EDIT MODLUE ADDRESS
     MODULE 1
        1
UPDATE
```

Module 1 is usually the Master module. The network address of each module is programmed to match the address switch of the module. Enter the new value and press UPDATE (F1) to update module one's address. Pressing ESC returns to the EDIT ADDRESS menu.

```
EDIT MODLUE ADDRESS
     MODULE 2
        0
UPDATE
```

To add module two to the system, program the next module address to match the dip switch in the module being added. Enter the new value and press UPDATE (F1) to update module two's address. Pressing ESC returns to the EDIT MODULE ADDRESS menu.

The remainder of the module addresses (3 - 6) are programmed similar to the examples shown above.

Set System Defaults

The SET SYSTEM DEFAULT menu allows for defaulting the ProCASE II to the factory configuration.

The three areas of the system that can be defaulted are the AXIS AND SYSTEM CONFIGURATION, SETUP files and user MENU CONFIGURATION.

```
SET SYSTEM DEFAULTS
CHOOSE DEFAULT TYPE

CFG   SETUP   MENU
```

To default the AXIS AND SYSTEM CONFIGURATION, press CFG (F1). To default the setup files, press SETUP (F2) and to default the user menu configuration, press MENU (F3). Pressing ESC will return to the previous menu.

- **Default Axis and System Configuration**

Defaults the AXIS AND SYSTEM CONFIGURATION to the factory values.

```
DEFAULTING
AXIS AND SYS CONFIG
CONTINUE?
YES                NO
```

Pressing YES (F1) will default the axis and system configuration to the factory values. Pressing NO (F2) will return to the SET SYSTEM DEFAULTS menu.

```
DEFAULTING
AXIS AND SYS CONFIG
DEFAULTING COMPLETE
```

After the system defaults the axis and system configuration, the system will display this screen for three seconds.

- **Default Setup Files**

Defaults the number of stored files to zero.

```
DEFAULTING
SETUP FILES
CONTINUE?
YES                NO
```

Pressing YES (F1) will delete all the setup files and reset the number of stored files to zero. Pressing NO (F2) will return to the SET SYSTEM DEFAULTS menu.

```
DEFAULTING
SETUP FILE
DEFAULTING COMPLETE
```

After the system deletes the setup files, the system will display this screen for three seconds.

▪ **Default User Menus**

The ProCASE II can be re-configured to display menus in languages other than English. This is accomplished using the ProBACK II Remote Programming & File Archiving software. When the default menu system has been changed, the new configuration remains resident in memory until another change occurs or until the menus are defaulted. This programming section is used to restore the menu system to the default factory configuration.
.

```
┌─────────────────────────┐
│      DEFAULTING         │
│      USER MENUS         │
│      CONTINUE?          │
│ YES                 NO  │
└─────────────────────────┘
```

Pressing YES (F1) will default the USER MENU configuration to the factory values. Pressing NO (F2) will return to the SET SYSTEM DEFAULTS menu.

```
┌─────────────────────────┐
│      DEFAULTING         │
│      USER MENUS         │
│  DEFAULTING COMPLETE    │
│                         │
└─────────────────────────┘
```

After the system defaults the user menu configuration, the system will display this screen for three seconds.

Edit System Event Log

The event log provides a way of tracking user and system events. The events can be viewed using the up and down arrow keys.

```
 21:08    06/03/97   ID = 1
      DATE CHANGED

PURGE
```

Pressing PURGE (F1) will delete **all** of the events from the log buffer. Pressing ESC returns to the SYSTEM CONFIGURATION menu.

Event Log Descriptions

This section describes each event message that is recorded by the ProCASE II automation system. Events are in the following format:

<div align="center">

Time   Date   User ID
Event Description
Event Parameter (Optional)

</div>

- Time is in 24 hour format.
- Date is MM/DD/YY or DD/MM/YY format depending on system configuration.
- User ID is the current user logged in when the event occurred.
- Event Description is a brief description of the event.
- Event Parameter is additional data recorded for the event.
  Note: Not all events have an Event Parameter.

User Logged In - Indicates that a valid user code was entered into the system and the user was logged in for normal system operation**. Parameter = User ID.**

User Logged Out - Indicates that the current user logged out of the system. **Parameter = User ID.**

Setup Started - Records the start of the machine setup sequence. A previously saved file has been recalled and the setup procedure has begun**. Parameter = Setup file name.**

Setup Completed - Records the end of the machine setup sequence. A previously saved file has been recalled and setup is complete. *The elapsed time between this event and the setup started event is the amount of time to reproduce the previously recorded setup.* **Parameter = Setup file name**.

Axis Drifted - Signifies that an axis drifted out of position while the ProCASE II was in RUN mode. **Parameter = Axis drifted**.

Axis Repositioned - Indicates that a previously drifted axis has been repositioned within the specified in-position tolerance during RUN mode. **Parameter = Repositioned axis.**

Date Changed - Records that the system date was changed. **Parameter = NONE.**

Axis Offset Modified - Indicates that the current position offset for an axis has been modified. The position offset is used to relate an axes' position with a real world reference*. An axis offset value should **only** be modified during tooling changes.* **Parameter = Axis modified**.

Setup File Saved - Signifies that a setup file has been created and stored to memory. Parameter = **Setup file name**.

Setup File Overwritten - Indicates that a previously saved setup file was overwritten with new position data. *The ProCASE II alerts the operator that a setup file currently exists with the same name. The operator must verify the overwrite before it occurs.* **Parameter = File name of setup overwritten**.

Axis Encoder Failure - Indicates that an enabled axis has failed to respond with position information in the allotted amount of time. **Parameter = Axis # Failed.**

Axis Homed - Records that an axis has been homed. This process synchronizes the axis position with a real world reference point. **Parameter = Axis # homed.**

Axis Segment Altered - Signifies that the user has modified the position segment offset for the specified axis. **Parameter = Axis number modified.**

Archive Connect Made - Indicates that a computer with ProBACK II software has made a successful data connection to the ProCASE II. **Parameter = NONE**.

Archive Connect Done - Signifies that the ProBACK II/ProCASE II communications link has been normally disconnected. **Parameter = NONE**.

Files Archived - Records that one or more files have been downloaded (received) by the ProBACK II software from the ProCASE II to store files to disk. *This event **does not** record the file names saved to disk.* **Parameter = NONE**.

Files Retrieved - Indicates that one or more files have been uploaded (sent) by the ProBACK II software to the ProCASE II. *This event **does not** record the file names sent to the ProCASE II.* **Parameter = NONE**.

Event Log Downloaded - Signifies that the event log on the ProCASE II was successfully downloaded (sent) to the ProBACK II software. **Parameter = NONE**.

Event Log Purged - Records that the event log has been purged by the master user code. *Normally, the event log records events until full and then overwrites the oldest events in memory with the newest events.* **Parameter = NONE.**

User Code Changed - Indicates that the user code for an operator has been modified by the master user. **Parameter = User code ID.**

File Deleted - Signifies that a previously saved setup file has been deleted from memory using the file directory command in the utility section of the SETUP menu. **Parameter = Setup file deleted.**

Axis Skipped - Indicates that an axis was skipped while recalling a previously saved setup file. *The ProCASE II can be configured to allow an axis to be skipped while recalling a setup file if that axis is not to be used in the setup. Normally, the ProCASE II requires ALL axes in the system to be repositioned to the recorded positions regardless of whether a particular axis is used in a setup.* **Parameter = Axis skipped.**

Setup Aborted - Records that the recalling of a previously stored setup file has been aborted. This occurs when the operator selects the ABORT (F) key while recalling a setup file. *This event replaces the setup completed event in this scenario.* **Parameter = Setup name aborted.**

Run Mode Started - Indicates that the ProCASE II has been placed into the RUN mode of operation. *Entering RUN mode occurs when the user completes the setup of a previously saved setup file by pressing the DONE key on completion of the setup or by manually entering the RUN mode from the ProCASE II menu system.* **Parameter = NONE.**

Axis Cfg File Changed - Signifies that one or more parameters have been altered in an axis configuration file. *This can occur by using the master user code from the ProCASE II hand held terminal or by uploading a new configuration file from the ProBACK II software.* **Parameter = Axis number modified**.

System Cfg Changed - Records that one or more parameters have been modified in the main system configuration file. *This can occur by using the master user code from the ProCASE II hand held terminal or by uploading a new configuration file form the ProBACK II software.* **Parameter = NONE.**

Time Changed - Indicates that the system time has been modified by the master user on the ProCASE II. **Parameter = NONE**.

Module Addr. Mod - Signifies that the address for a module in the system has been modified by the master user. **Parameter = Module number.**

Run Mode Exited - Records that the RUN Mode on the ProCASE II has been exited**. Parameter = NONE**.

Run Mode Aborted - Indicates that the RUN Mode was exited abnormally while an axis had drifted. *Instead of repositioning the faulted axis, the machine operator aborted the RUN Mode.* **Parameter = NONE**.

AC Power On - Indicates that the system has been reset, typically because of a restoration of AC power after a power failure.