
Portable Control/Display Unit Product Guide



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Revision History

The following table shows pages that have been revised since the first release of this document.

Date	Affected Pages
01/22/96	First release



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Warranty Standard products manufactured by the Company are warranted to be free from defects in workmanship and material for a period of one year from date of shipment and any products which are defective in workmanship or material will be repaired or replaced, at the Company's option, at no charge to the Buyer. Final determination as to whether a product is actually defective rests with the Company. The obligation of the Company hereunder shall be limited solely to repair or replace, at the Company's discretion, products that fall within the foregoing limitations, and shall be conditioned upon receipt by the Company or written notice of any alleged defects or deficiency promptly after discovery and within the warranty period, and in the case of components or units purchased by the Company, the obligations of the Company shall not exceed the settlement that the Company is able to obtain from the supplier thereof. No products shall be returned to the Company without its prior consent. Products which the Company consents to have returned shall be shipped prepaid f.o.b. the Company's factory. The Company cannot assume responsibility or accept invoices for unauthorized repairs to its components, even though defective. The life of the products of the Company depends, to a large extent, upon the usage thereof, and THE COMPANY MAKES NO WARRANTY AS TO FITNESS OF ITS PRODUCTS FOR THE SPECIFIC APPLICATIONS BY THE BUYER NOR AS TO PERIOD OF SERVICE UNLESS THE COMPANY SPECIFICALLY AGREES OTHERWISE IN WRITING AFTER THE PROPOSED USAGE HAS BEEN MADE KNOWN TO IT.

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**INTRODUCTION**

The Portable Control/Display Unit (PCDU) is an optional device that connects into a drive and allows easy interface between the operator and the drive for setting parameters, viewing drive data, logging faults, and/or troubleshooting. The PCDU has a 30 button membrane-type keypad and a 2 line, 16 character alphanumeric display. The software in the drive is designed to make it unnecessary to have one PCDU for each drive in a system, although this may be desirable. The PCDU may be connected into and removed from any drive while the drive is running without loss of drive data. Some diagnostics require the use of the PCDU since it offers greater flexibility.



PCDU MENU KEYS

Each operation that the PCDU performs can be grouped into one of six different categories called menus. The six menus on the PCDU are HELP, FORCE, MONITOR, PARAMETER, FAULT, and TEST. These menus are represented by the keys labeled HLP, FRC, MON, PRM, FLT, and TST. Pressing any of the menu keys, will bring you to the top selection within that particular menu. The six menus are independent of each other. This feature allows the PCDU to “remember” what function was being performed in one menu while the PCDU is performing a function in a different menu. A single press of the appropriate menu key will return to the most recently used function within that menu.

<div style="border: 1px solid black; padding: 5px; text-align: center;"> F HLP </div>	HLP	(Help Menu): This menu offers GENERAL HELP at the top level and “context-sensitive” help for the different operations available in the FRC, MON, PRM, FLT, and TST menus.
<div style="border: 1px solid black; padding: 5px; text-align: center;"> G FRC </div>	FRC	(Force Menu): This menu is used to change inputs and/or outputs of a PAC block to a given value. This is done for troubleshooting purposes.
<div style="border: 1px solid black; padding: 5px; text-align: center;"> K MON </div>	MON	(Monitor Menu): This menu is used for viewing the values of functions that can not be set directly with the PCDU. Examples of these would be: line speed, motor speed, speed reference or armature current.
<div style="border: 1px solid black; padding: 5px; text-align: center;"> L PRM </div>	PRM	(Parameter Menu): This menu is used to change the value of those parameters that can be modified with the PCDU. Examples of these would be: current limits, rated line speed, or accel/decel times.



P FLT	FLT	(Fault Menu): This menu is used to gain access to the FAULT List and the ERROR List within the drive to get a running history of the operation of the drive.
Q TST	TST	(Test Menu): This menu is used to performed certain diagnostic tasks. Items in this menu include loading factory set defaults for parameters, SCR and fuse testing, and other diagnostic functions.

Some of the PCDU keys have functions which are not always prompted by the display. These keys are:

- ESC (Escape):** When this key is pressed, it moves the PCDU display one level closer to the top of the current menu.
- SHF (Shift):** This key toggles in and out of the alphabetic character entry mode. The shift key must be pressed for every key that needs shifting.
- CLR (Clear):** This key is used when changing a parameter in the Parameter menu. If an error is made when setting a parameter, this key is used to clear the display so that the proper value can be entered.

**INITIAL DISPLAY OF THE PCDU**

When the PCDU is first plugged into the drive, one of two displays will appear:

- ◇ If a fault is present the PCDU will display:

```
DISPLAY FAULTS
 (press ENT)  F000
```

Instructions on the use of the PCDU to view faults can be found in page 16.

- ◇ If there are no faults present, a scrolling greeting message will be displayed:

```
PRESS HELP
This MagneTek DSD (Digital
```

This scrolling display will continue until a key is pressed on the PCDU.

**HELP (HLP) MENU**

The PCDU contains “context-sensitive” help. This means that the messages that are displayed after pressing the HLP key will vary depending on what the PCDU is being used for at that moment. GENERAL help is available at the top level, while specific help for each menu will be displayed when the PCDU is operating within that menu. The five remaining help screens are for the FRC, MON, PRM, FLT, and TST, menu keys.

After the PCDU is plugged in and completes its initialization, it will display the following (assuming there are no faults):

```
PRESS HELP
This MagneTek DSD (Digital
```

- Press the HELP key. The PCDU is now at the GENERAL help level, and it will display the following:

```
<—, —>, OR ESC
<< START: GENERAL . . .
```

At this point, the PCDU will recognize only five keys. Those keys are: “<—”, “—>”, INC, DEC, or ESC. The INC key speeds up the scrolling rate of the display, while the DEC will slow it down.

- Press the “—>” key to begin scrolling through the help text. The PCDU display now begins scrolling:

```
START: GENERAL . . .
```



The PCDU stops scrolling when it reaches the end of a sentence. In the case of the first sentence in the GENERAL help screen, the PCDU display stops at:

<—, —>, OR ESC c DSD drive.

- Press the “ —>” key again to resume scrolling through the help screen.
- Press the “<—” key to halt the scrolling text and display the start of the current sentence. Repeatedly pressing the “<—” will step back to the beginning of previous sentences in the help menu.

Context Sensitive Help

Each menu in the PCDU possesses a help text. This help text will provide information pertaining to the specific menu the PCDU is in. As an example, the help text for the Parameter Menu will be accessed:

- Press the PRM key. A typical display in the top level of the PRM menu might be:

```
POSITIVE I LIMIT  
150% P001
```

If the HLP key is pressed, the Parameter help text will describe what a typical screen in the PRM menu looks like and how to change the parameter value. The first screen of the help text for the Parameter Menu will be:

```
<—, —>, OR ESC  
<< START: PRM HELP . . .
```

Any of the following keys: “<—”, “—>”, INC, DEC, or ESC may be pressed to move through the help text. The ESC key will always exit the help function, and return the PCDU to what was being displayed prior to pressing the HLP key. If instead the HLP key is again pressed, the PCDU will return to the GENERAL help text:

```
<—, —>, OR ESC  
<< START: GENERAL . . .
```

**MONITOR (MON)
MENU**

The MON menu contains the values of functions that can be viewed, but NOT modified. Function codes # 600 through # 799 are reserved for display-only types of values. Function codes for display-only types of values are dependent on the contents of the PAC Diagram for the particular drive.

Example:

Assume the operator wishes to view the armature voltage of the motor. For this example the armature voltage has function code # 610. The appropriate function can be selected in one of two ways:

1. Scrolling

- Press the MON key followed by enough INC or DEC key repetitions until the desired item shows in the PCDU display:

ARM VOLTAGE 0.5V M610

OR

2. Direct Access

- Enter the appropriate function code from the top level of any menu display. The display will change to:

Enter Function Number : 610

- Press the ENT key. The display will show:

ARM VOLTAGE 0.5V M610

This display shows the function name on the top line. The present value, units, and the function code are shown on the bottom line. The “M” before the function code indicates that the item in the display is from the MON menu. In order to view the next or previous function in the MON menu, the operator may press the INC or DEC key. Note that there may be a numerical gap in the function codes depending on what the PAC diagram contains. The PCDU will wrap around to the first displayed function if the INC key is pressed while the LAST function is displayed.

**PARAMETER (PRM) MENU**

The Parameter menu contains the settable parameters used by the drive. This menu is used to view and optionally modify those parameters. Function codes # 001 through # 299 are reserved for settable parameters. These function codes are PAC diagram dependent, and the parameters assigned to these codes are therefore defined by the user.

Viewing a Parameter

Example:

Assume the operator wants to view the current value for the TACH PULSES/REV. For this example the function number will be # 010. The operator has two ways of selecting the appropriate function:

1. Scrolling

- Press the PRM key followed by enough INC or DEC key repetitions until the desired item shows in the display:

TACH PULSES/REV 2500. P/R P010

OR

2. Direct Access

- Enter the appropriate function code number (for this example it will be 010) from the top level of any menu display. The PCDU display will change to:

Enter Function Number : 010

- Press the ENT key. The PCDU now displays:

TACH PULSES/REV 2500. P/R P010

This display shows the function description on the top line. The present value, units, and the function number are displayed on the bottom line. The “P” before the function number indicates that the item in the display is from the PRM menu. By pressing the INC or DEC key, the operator can view the next or previous parameter.

Changing a Parameter

Example:

The operator from the previous example wants to change the value for the TACH PULSES/REV. After accessing the desired parameter (see “**Viewing a Parameter**” on page 10):

- Press the ENT key to allow the parameter presently in the display to be changed. This Setup mode is active **when the top line of the PCDU display is flashing.**

The parameter in the display may be changed in one of two ways:

1. Up to five digits plus a decimal point may be pressed. The “+/-” key may also be pressed. When this key is used, the left-most character (sign digit) will change sign. As soon as the first digit key, “+/-” key, or decimal point key is detected, the INC and DEC keys will be ignored. The PCDU recognizes when decimal points are appropriate, based on the PAC diagram, and handles



the decimal point key and subsequent digits accordingly.

2. The INC and DEC keys can be used to modify any parameter data. The least significant digit of the parameter will be changed by 1 for every INC or DEC key entry. Upon the first INC or DEC key entry, the “+/-” key, the decimal point key, and numeric keys are ignored.

The ENT, CLR, or ESC keys or one of the menu keys may be pressed at any time while modifying a parameter. The PCDU’s reaction to these keys will be:

ENT The ENT key is used to accept the new data in the display. If this key is pressed, the PCDU will exit the Setup mode (top line will stop flashing), and compare the number just entered against upper and lower limits for that parameter. If the number is beyond either limit, the PCDU briefly displays “vLimv” or “^Lim^”, followed by the current active value. “vLimv” and “^Lim^” refer to lower and upper limits, respectively.

Example:

If a value of 250 is entered as the new desired set point while the lower limit is 600 for the TACH PULSES/REV, the PCDU will display:

TACH PULSES/REV vLIMv. P/R P010



This display indicates that the new value is below the lower limit. After 1/2 second, the PCDU displays the current active value:

TACH PULSES/REV 2500. P/R P010

A similar message is displayed if the upper limit is exceeded, but “^Lim^” is shown instead.

CLR The CLR key is used to erase the new data in the display BEFORE the ENT key is pressed. If this key is used, the PCDU will remain in the Setup mode (top line flashing), but the new value will be the current value.

Example:

Assume a new value of 3600 was keyed in for the TACH PULSES/REV, followed by the CLR key. The display will show:

TACH PULSES/REV 2500. P/R P010

This is the current active value.

ESC The ESC key is used to exit the Setup mode WITHOUT changing the parameter. The top line will stop flashing, and the bottom line displays the present value for the parameter. Any changes made to the parameter in the display are discarded.



***FRC, PRM, MON,
FLT, TST***

These keys will cause the PCDU to display the most recently displayed item in that particular menu. If any of these keys are pressed before the ENT key, the changes made to the parameter being modified are lost.

Note: **All changes become active values upon pressing the ENT key.** They remain active until the next reset, or until the drive is powered down. When the drive is reset or powered up, the values revert to the values stored in NVRAM (Non-Volatile Memory). If changes are to be permanent, use function # 994 to save the changed values in NVRAM. (See “**NVRAM Access**”, on page 37.)

Due to PAC programming considerations it may be possible to access a value which can not be changed. In this case the PCDU function will proceed as described until the ENT key is pressed to change the value. Any changes will be ignored, and the value will remain the same.

**FAULT (FLT)
MENU**

The drive has two methods available to report errors. Each error condition may utilize ONE or BOTH of the reporting methods.

1. The FAULT LIST

The most conventional method is called “fault recording”. If this method is enabled for a particular error, the red FAULT LED will light, and a unique fault code will appear on the Standard Control Display Unit (display on drive) at the moment the error occurs.

Each occurrence of a fault is recorded in an area in RAM called the FAULT LIST. The FAULT LIST stores the 16 OLDEST faults and stops recording faults as soon as the 16th fault occurs. This list is erased whenever the drive is powered down or reset. Whether or not the drive stops or continues to run is dependent on the way the particular fault is implemented within the PAC diagram. Most standard faults are set up so that the drive will stop if a fault occurs.

2. The ERROR LIST

The second method for error handling is called “error recording”, and will produce an ERROR LIST. Error recording differs from fault recording in three aspects. First, the error will not be shown on the Standard Control Display Unit, and the red FAULT LED will not light at the moment the error occurs. Second, the ERROR LIST stores the 16 MOST RECENT errors, and always overwrites the oldest errors with the newest errors. Third, this list is



maintained in the NVRAM and is retained when the drive is powered down or reset. Operation of the drive is totally independent of whether error recording is enabled or not.

There are three functions available under the FLT menu:

FUNCTION # 000: This function is used to display and optionally clear the OLDEST 16 FAULTS.

FUNCTION # 800: This function is used to display the NEWEST 16 ERRORS along with their respective time-stamp.

FUNCTION # 801: This function is used to display/alter the Error Disposition List. This is used to “steer” each error into the Fault List, Error List, or both. The Error Disposition List is consulted any time an error occurs to determine whether it should be reported as an error, a fault, or both.

**Displaying the
Fault List
(Function # 000)**

In order to display and optionally clear the OLDEST 16 Faults, Function # 000 should be used. This function can be selected in two ways:

1. Scrolling

- Press the FLT key followed by enough INC or DEC key repetitions until the PCDU displays:

```
DISPLAY FAULTS
 (press ENT)  F000
```

- Press the ENT key.

OR

2. Direct Access

- Enter the function number 0 from the top level of any menu. The display changes to:

```
Enter Function  
Number : 000
```

- Press the ENT key. The PCDU now displays:

```
DISPLAY FAULTS  
(press ENT) F000
```

- Press the ENT key.

Once the Fault List has been accessed by selecting Function # 000, the PCDU has the following possible displays:

If there are no faults currently in the Fault List, the display will change to:

```
NO FAULTS  
(Press ESC)
```

- Press ESC to return to the top level display:

```
DISPLAY FAULTS  
(press ENT) F000
```

If faults are present in the Fault List, the PCDU will display:

```
TOP OF FLT LIST  
CLR clears all
```

This informs the operator that he is viewing the top of the Fault List, and that pressing



the CLR key will remove EVERY fault from this list. Pressing the INC or DEC keys will allow moving around in the list.

Example:

The PCDU displays the following fault:

```
MATH UNDERFLOW
F102 Blk: 00702
```

The top line shows the fault, and the bottom line shows the fault code (102) along with which PAC block declared this fault (00702). The next “newest” fault is displayed every time the DEC key is pressed. The last “older” fault is displayed by pressing the INC key. By pressing the DEC key repeatedly, the end of the Faults List is reached. The PCDU will display the following:

```
END OF FLT LIST
PRESS INC
```

The top of the Fault List is reached by repeatedly pressing the INC key. The PCDU will display the following:

```
TOP OF FLT LIST
CLR clears all
```




Note: Faults that are declared by the Kernel of the DCU will be displayed as having a PAC block number of 00000. The Kernel is the fixed (i.e. non-changeable) code for the DCU microprocessor which forms the operating system of the microprocessor. It controls the generation of the various scans, the order of execution of the PAC tasks, the information passed to and from the PAC tasks and the execution of other standard code not directly associated with the PAC tasks such as the control of the CDU or LAN handler. The DCU (Drive Control Unit) refers to the hardware and software used to control the drive. Specifically, it refers to the hardware and software associated with the 68000 microprocessor. The DCU software includes the variable software generated as a result of the PAC program and the fixed software (Kernel) used to control execution of the PAC program.



Clearing All Faults in the List

There may be up to 16 faults present in the Fault List. It is possible to clear the entire list or selectively remove certain faults from the list.

The procedure for clearing the entire Fault List is as follows:

- Select Function # 000 (see “Displaying the Fault List”).
- Press the INC key until the PCDU displays:

```
TOP OF FLT LIST
CLR clears all
```

- Press the CLR key. The red FAULT LED on the drive front of the drive will turn off, and the display on the drive front panel will change back to its previous display prior to showing the first fault. The PCDU returns to its top level display:

```
DISPLAY FAULTS
 (press ENT)  F000
```

**Clearing
Individual Faults**

The procedure for selectively removing a fault from the Fault List is as follows:

- Select Function # 000 (see “Displaying the Fault List”).
- Press the INC or DEC keys to display the fault code that is to be removed from the Fault List.
- Press the CLR key. At this moment EVERY FAULT WITH A MATCHING CODE NUMBER IS REMOVED FROM THE LIST, REGARDLESS OF WHICH PAC BLOCK HAS DECLARED IT. If there are faults with a DIFFERENT fault code still in the Fault List, the PCDU displays that particular fault. If there are no more faults in the Fault List, the PCDU returns to its top level operation and the display will be:

```
DISPLAY FAULTS  
(press ENT) F000
```



Displaying the Error List (Function # 800)

In order to view the most recent 16 errors along with their time stamp, function # 800 should be used. This display error function can be selected in two ways.

1. Scrolling

- Press FLT key, then followed by the INC or DEC key until the PCDU displays:

```
VIEW ERROR LIST
(Press ENT)  F800
```

- Press the ENT key.

OR

2. Direct Access

- Enter the function number at the top level of any menu. The display will change to:

```
Enter Function
Number : 800
```

- Press the ENT key. The PCDU will now display:

```
VIEW ERROR LIST
(Press ENT)  F800
```

- Press the ENT key.

Once the Error List has been accessed by selecting Function # 800, the PCDU has the following possible displays:



If no errors are present in the Error List, the PCDU will display:

```
NO ERRORS YET
(Press ESC)
```

- Press the ESC key. The PCDU will return to the top level display:

```
VIEW ERROR LIST
(Press ENT) F800
```

If errors are present in the Error List, the PCDU displays the first error recorded in the Error List. A typical PCDU display would be:

```
MATH UNDERFLOW
05:35:12 * B00702
```

The top line indicates which error is being displayed. The bottom line has three parts. The left most item shows how long the drive has been powered up since the error occurred. The range of the time-stamp is such that it will be able to represent more than 2 years time. The elapsed time for an error will be set at the maximum value (745 days) if no new errors have occurred since then, and the drive has not been powered down. There are two possible formats for the time-stamp. It will be expressed in an HH: MM: SS (hours, minutes, and seconds) format if the error occurred within the last 24 hours (with the drive powered-up). It will be expressed as DD-HH:MM (day, hours, minutes) if the error occurred more than 24 hours ago (with the drive powered up). The next item in the display is the “*” character. This character marks a fixed slot in the list. Note that there is really no “start” to the



Error List since it may be overwritten at any time. The “*” is used to show when one complete “loop” of the Error List has been viewed. The right most item on the bottom line is the number of the PAC block which declared the error. This screen displays more information than the display on the dive by accessing function #800.

- Press the INC key to display more recent errors. A typical display will be:

DIVIDE BY ZERO 014-11:28 B03628

This display is similar to the one above, but does not have the “*” character on the bottom line. Every error in the Error List can be viewed by pressing the INC key until the “*” appears again. Pressing the DEC key will display the errors older than the one currently being displayed.

**The Error
Disposition List
(Function # 801)**

Function # 801 is used to include or exclude a particular error from the Fault List and/or the Error List. The Modify Disposition List function can be selected in two ways:

1. Scrolling

- Press the FLT key, then repeatedly press the INC or DEC key until the PCDU displays:

```
MODIFY DISP LIST  
(Press ENT) F801
```

- Press the ENT key.

OR

2. Direct Access

- Enter the function # 801 from the top level of any menu. The display changes to:

```
Enter Function  
Number : 801
```

- Press the ENT key. The PCDU now displays:

```
MODIFY DISP LIST  
(Press ENT) F801
```

- Press the ENT key.

After the Error Disposition List has been accessed by selecting Function # 801, the PCDU will show the error which most recently had its disposition changed by this function. If function # 801 has not been



entered since power-up or reset, the PCDU will display:

BAD INSTRUCTION #013 Error Fault

The top line is the description of the error. The bottom left of the display shows the error code number (013). The rest of the display indicates which list(s) will record error 013. In this example, it would be placed in the Error List and the Fault List, since the words “Error” and “Fault” both appear on the bottom line.

How to Select the Error Code to View and/or Change Its Disposition

- Select Function # 801 and access the Disposition List (see page 25).
- Follow examples below.

Example 1) illustrates the steps to follow when the error code number is known.

Example 2) shows steps when error code number is not known.

1) Example:

It is desired to change the disposition for a Math Underflow error. It will be assumed for this example that this error has a code number of 102.

- Key in the corresponding error code (102).

The PCDU will display:

Enter the error Code Number : 102

- Press the ENT key to select the error code. The PCDU will display the current disposition for a Math Underflow error:

Math Underflow #102 Error Fault

Note that the top line of the display is solid to indicate that the current disposition of the error is now being displayed.

- ⇒ • Press the ENT key to modify the disposition of the error currently being displayed. The top line will flash to indicate that changes are to be made to the disposition of this error.

There are four combinations of disposition available for each error. These are: No Error/No Fault, No Error/Yes Fault, Yes Error/No Fault, and Yes Error/Yes Fault. The INC and DEC keys are used to select which combination will be used. **The error will not be reported to either list if there is a No Error/No Fault display:**

Math Underflow #102

- Press the INC and/or DEC key until the desired disposition is shown in the display. For this example the Math Underflow error should be reported to the Error List and not to the Fault List. The following display should be obtained:

Math Underflow #102 Error



- Press the ENT key to store this new setting for the disposition of this error. The new disposition is now stored in NVRAM. It is not necessary to move the NVRAM protection switch to the “OFF” position for this function. After the ENT key is pressed, the PCDU will display the current disposition of the error:

Math Underflow #102 Error

After this selection, a Math Underflow error will be recorded in the Error List, but not in the Fault List.

2) *Example:*

If the error code number is not known, the INC and/or DEC keys may be used to view the current disposition of EVERY error known to the drive.

- Keep pressing the INC and/or DEC key until the PCDU is displaying the disposition for the desired error.
- Next follow the same steps as in Example 1 from the arrow pointed (⇒) instruction.



TEST (TST) MENU

Trace Monitor Function #980

The Trace Monitor function # 980 allows real-time data that exists at a given PAC block's input or output to be displayed. An analogy could be drawn between the function of the Trace Monitor function and troubleshooting a circuit board if that circuit board had a test point for every component on the board. There is only one restriction on tracing PAC blocks. The **only** points that may be traced on a PAC diagram are those points where one PAC block is **directly connected** to another PAC block. In other words, the output of a NUMO block or the inputs to a NUMI block cannot be traced since these points are not directly connected to another block.

There are four Trace Buffers available to hold trace information. It is possible to set up the Trace Buffers so that each buffer is collecting different data simultaneously. The Trace Monitor requires the operator to set up each buffer with the PAC block number and the I/O number to be traced if the PAC block has more than one input and/or output. For this reason, a PAC diagram is required if tracing is to be attempted.

The Trace Monitor function is available only on the PCDU. The drive's LCDU display will show "Pcdu" if function # 980 is selected.

The PAC block numbers used in this section are for illustrative purposes only.

**Using the Trace Monitor Function**

Select the Trace Monitor Function in one of two ways:

1. Scrolling

- Press the TST key. Then repeatedly press the INC or DEC key until the PCDU displays:

```
TRACING MONITOR
(Press ENT) T980
```

- Press the ENT key.

OR

2. Direct Access

- Enter function # 980 from the top level of any menu. The display changes to:

```
Enter Function
Number : 980
```

- Press the ENT key. The PCDU will display:

```
TRACING MONITOR
(Press ENT) T980
```

- Press ENT to enter the Trace Monitor.

Once the Trace Monitor Function has been accessed, the PCDU will display:

```
F1 = Edit Trace
F2 = View Trace
```

The F1 key is used to enter or edit a PAC block into one of the four Trace Buffers. Once the necessary information has been entered, the contents of the Trace Buffer for the selected PAC block will be displayed.

The F2 key is used when entering or editing a PAC block is **not** desired. This function allows the user to view the contents of the Trace Buffers previously selected.

*How to Use the
Edit Trace / F1
Option*

- Press the F1 key to enter the PAC block into a Trace Buffer. The PCDU displays the data currently in the last selected buffer. Initially, all buffers will be empty and the display will be:

```
Trace Buffer #0  
Empty (Press ENT)
```

If this particular Trace Buffer had previously been loaded with a PAC block, the data in that block would be displayed instead. A typical display might be:

```
Trace Buffer #0  
Blk : 00101  In : 02
```

This display indicates that Trace Buffer # 0 is currently being used to trace input # 2 of block # 101.



At this point the operator may press one of three keys.

- Press the DEC key to view the PAC block in the previous Trace Buffer. The PCDU will wrap back to Trace Buffer # 3 if Trace Buffer # 0 is currently in the display. The PCDU will display:

```
Trace Buffer #3  
Empty (Press ENT)
```

- Press the INC key to view the PAC block in the next Trace Buffer. The PCDU will wrap forward to the Trace Buffer # 0 if Trace Buffer # 3 is currently in the display.
- Press the ENT key. The PCDU prepares to edit the Trace Buffer currently in the display (**top line of display flashes**). The new PAC Block must be entered at this point. An example of this display is:

```
Trace Buffer #0  
Blk [00101]
```

If the PAC block number in the brackets is the same as the PAC block to be placed in the Trace Buffer, press the ENT key.

If 0000 is entered as a PAC block, that Trace Buffer will be cleared. The PCDU will display:

```
Trace Buffer CLR  
(Press ESC)
```

- Press ESC to return to:

F1 = Edit Trace F2 = View Trace

Example:

The operator wishes to set up the Trace Monitor to view input # 3 of PAC block # 243. After the F1/Edit Trace key has been selected and pressing the ENT key (top line flashes), the operator must enter the new PAC block #. For this example Buffer # 0 is used. If it is desired to trace a different I/O point of the same block that is currently being traced, press the ENT key without re-entering the same block number.

- Enter block # 243:

Trace Buffer #0 Blk [00000] 00243

- Press the ENT key.

At this point the PCDU will perform an internal search to verify that the requested PAC block number exists within the drive. If the block does not exist, the PCDU will display:

Non-existent Blk # (Press ESC)

- Press the ESC key if the above display appears, and re-enter the PAC block number again. Repeat these steps selecting a PAC block # from your PAC diagram.



If the desired pack block exists, the PCDU has two possible displays.

1. If the PAC block has one or more inputs and/or outputs, the display will be:

F1 = Block Input F2 = Block Output

2. If the PAC block has a single input or a single output, the PCDU will directly display the contents of the Trace Buffer for the selected PAC block.

For the first type of display, press F1 or F2 to select either an input or an output of a PAC block. The PCDU displays one of the two following screens, depending on whether F1 or F2 was pressed.

F1

ENTER INPUT [02] NEW :

F2

ENTER OUTPUT [02] NEW :

Note that the number in the brackets is the I/O number of the PAC block that the Trace Monitor is currently set up to view.

- For this example, press the F1 key followed by the 3 key to select input # 3 of PAC block # 243.
- Press ENT.

The PCDU software will begin to check flags set by the tracing routines and displays the current value (logic or numeric) when it is valid. There are some instances where a request to trace a PAC block cannot be honored. For example, a requested I/O for a valid block may not be available. If this occurs, the PCDU displays:

```
Blk 00960 Out 00  
#0 Invalid I/O
```

If the PAC I/O can be traced, the display will show the current value in the proper format. It is important to realize that the Trace Buffer will only be alerted to data from a given block after its buffer has been programmed correctly. If a Trace Buffer has been programmed to capture data from a block located in a conditional scan, that data will not be observed until the conditional scan in question is able to run. When this condition is present, the PCDU will display a waiting message on the bottom line as shown:

```
Blk 00960 Out 00  
#0 Waiting . . .
```

The PCDU can display fixed point numeric data, floating point numeric data, or logic data from appropriate PAC blocks. The actual display will vary depending on what kind of data is being viewed. The display



will be similar to one of the formats below, assuming that the data is available:

(Floating Point)

```
Blk 00243 Out 03
#0 R 9.73323E-04
```

(Fixed Point)

OR

```
Blk 00243 Out 03
#0 R 9.73323E-04
```

(LOGIC)

OR

```
Blk 00112 Out 00
#0 LOGIC OFF
```

The top line is divided into three parts. The five-digit number following “Blk” is the block number currently in this Trace Buffer. The word “In” or “Out” indicates whether an input or an output is being traced. The two-digit number at the far right is the I/O number of the block. The bottom line is divided into three parts. The single digit following the “#” indicates which of the four Trace Buffers is currently in the display. This number will always be between 0 and 3 inclusive. Following the trace buffer number is either an “R”, an “F”, or the word “LOGIC”. This indicates what type of data is currently being viewed. The “R” means “REAL” (floating point) data, the “F” means “FIXED” (non-floating point) data, and the “LOGIC” means the I/O being shown is a logic signal. Note that a “FIXED POINT” number may have digits to the right of the decimal point, while an integer will not.

As mentioned before, it is possible to program up to four Trace Buffers to capture data simultaneously. Pressing the INC or DEC keys while viewing a Trace Buffer will cause the PCDU to display the trace data from the next or previous Trace Buffer.

*How to Use the
View Trace / F2
Option*

This option is used when entering or editing a PAC block into a Trace Buffer is **not** desired. The view option will allow user to directly display the contents of the Trace Buffers. Pressing the INC or DEC keys will cause the PCDU to display the trace data from the next or previous Trace Buffer. If a Trace Buffer is not in use, the PCDU will display:

Buffer 2 unused
Press INC or DEC

**NVRAM Access /
Function # 994**

Every parameter that the drive uses has three separate areas in memory associated with it. There is a factory-set default value for each parameter which is stored in the read only EPROM chip. There is an area in the active RAM which the drive uses while it is running. There is also an area in NVRAM reserved for each parameter. The values in the NVRAM area are copied to the active RAM every time the drive is powered up or the RESET button is pressed. This split-level approach makes it possible to return to the last set of “stable” parameters in NVRAM if errors are made while fine-tuning the active drive parameters.



Function # 994 performs the transfer of data between the NVRAM parameter list and the active parameter lists. The process for copying data to or from the NVRAM parameter list is as follows:

Select the NVRAM ACCESS function in one of two ways:

1. Scrolling

- Press the TST key, then repeatedly press the INC or DEC key until the PCDU displays:

```
NVRAM ACCESS
(Press ENT) T994
```

This display shows the description of function # 994 on the top line. The bottom line displays a prompt to press the ENT key as well as the function number (994) currently being used. The “T” preceding “994” indicates that the function code is part of the TEST menu.

- Press the ENT key.

OR

2. Direct Access

- Enter Function # 994 from the top level of any menu display. The display changes to:

```
Enter Function
Number : 994
```

- Press the ENT key. The PCDU now displays:

```
NVRAM ACCESS
(Press ENT) T994
```

- Press the ENT key.

Once the NVRAM Access function has been selected, the PCDU will display:

```
F1 : Rest   F2 : Save
NV -> RAM  RAM -> NV
```

The operator has three choices at this point. The F1 key will copy all parameters from NVRAM to active RAM. Note that once this is done, it is impossible to retrieve the parameters that the drive was using prior to pressing F1. The F2 key will attempt to copy all parameters from active RAM to NVRAM. The ESC key will return to the top level display for this function.

- If the F1 key is pressed, the PCDU will display:

```
Restoring data . . .
```

One second later, the display changes to:

```
Restore is done,
press ESC key
```

- Press the ESC to return to the top level display for this function:

```
NVRAM ACCESS
(Press ENT) T994
```

- If the F2 key is pressed, the PCDU will display one of two messages,



depending on whether the NVRAM Protection switch is in the “ON” (Red LED light on panel is OFF) or “OFF” (Red LED light on panel is ON).

If the NVRAM Protection switch is in the “ON” position, the PCDU will display the following flashing message:

```
NVRAM protected
press ESC key.
```

If this occurs, proceed as follows:

- Press the ESC key.
- Move the NVRAM Protection switch to the “OFF” position. The PCDU returns to the top level display again.
- Press the ENT key.
- Press the F2 key. The PCDU displays a success message:

```
Save completed
press ESC key.
```

- Move the NVRAM Protection switch to the “ON” position.
- Press the ESC key to return to the top level for this function:

```
NVRAM ACCESS
(Press ENT) T994
```

**Loading Defaults /
Function # 995**

Every parameter in the drive has a factory-set default value that is loaded when the drive is powered up for the first time. These default parameters may not be optimal values for the drive when actually running, but they will generally allow the drive to function properly. It is possible to reload these default parameters with function # 995 of the PCDU. A reload of the defaults would generally be done when the drive is operating erratically, and it is suspected that one or more parameters were improperly set.

CAUTION

Use of the LOAD DEFAULTS function will overwrite EVERY parameter currently being used by the drive with the factory-set default for the parameter. There is no way to automatically restore parameters to their previous values once this function is used.

Function # 995 performs the transfer of data from the default parameter list to the NVRAM parameter list. The process for accessing the Load Defaults Function is as follows:

Select the LOAD DEFAULTS function in one two ways:



1. Scrolling

- Press the TST key, then repeatedly press the INC or DEC key until the PCDU displays:

```
LOAD DEFAULTS
(Press ENT) T995
```

This display shows the description of function # 995 on the top line. The bottom line displays a prompt to press the ENT key as well as the function number (995) currently being used. The “T” preceding “995” indicates that this function code is part of the TEST menu.

- Press the ENT key.

OR

2. Direct Access

- Enter the appropriate function number (995) from the top level of any menu display. The display changes to:

```
Enter Function
Number : 995
```

- Press the ENT key. The PCDU now displays:

```
LOAD DEFAULTS
(Press ENT) T995
```

- Press the ENT key.

Once the Load Defaults function has been accessed, the PCDU displays one of two messages.



- If the NVRAM PROTECTION switch is in the “OFF” position, the PCDU displays the following success message:

Defaults loaded
press ESC key.

- If the NVRAM PROTECTION switch is in the “ON” position, the PCDU displays the following error message:

NVRAM protected
press ESC key.

- In this case, move the NVRAM PROTECTION switch to the “OFF” position.
- Press the ESC key. Start again from this display:

LOAD DEFAULTS
(Press ENT) T995



**Self-Tune / Power
Conversion Unit
Parameter
Measurement
Function # 997**

The DSD drive has a built-in current regulator SELF TUNING feature. When activated, this feature measures total motor armature circuit resistance and inductance, including wiring. The drive then uses the measured values in conjunction with the parameter entered for “CROSSOVER FREQUENCY” to calculate integral and proportional gains for the current regulator. After running the Power Conversion Unit Parameter Measurement function, the values for armature resistance and armature inductance are stored in NVRAM. It is important to note that it is possible to override the values that have been dynamically calculated for armature resistance and inductance by the “USE SELF-TUNE” item in the Parameter Menu. The dynamically calculated values are used if “USE SELF-TUNE” is set to “ON”, while the manually entered values are used if this item is set to “OFF”.

WARNING

Current is circulated through the armature circuit during the Power Conversion Unit Parameter Measurement function. The Power Conversion Unit will reduce the field current to zero on motors with a shunt field in order to minimize motor rotation. However, a PERMANENT MAGNET motor must have its shaft locked mechanically prior to running the Power Conversion Unit Parameter Measurement routine. If the

Power Conversion Unit detects significant motor voltage during the test, the Power Conversion Unit Parameter Measurement function will abort.

The Power Conversion Unit Parameter Measurement function can be selected in one of two ways:

1. Scrolling

- Press the TST key, then repeatedly press the INC or DEC key until the PCDU displays:

PCU SELF-TUNE (Press ENT) T997

This display shows the description of function # 997 on the top line. The bottom line displays a prompt to press the ENT key as well as the function number currently being used. The “T” preceding the “997” indicates that this function code is part of the TEST menu.

- Press the ENT key.

OR

2. Direct Access

- Enter the appropriate function number (# 997) from the top level of any menu display. The display changes to:

Enter Function Number : 997



- Press the ENT key. The PCDU now displays:

```
PCU SELF-TUNE
(Press ENT) T997
```

- Press the ENT key.

Once the Self-Tune function has been accessed, the PCDU will display the following message:

```
Press F3 to
measure parameters
```

This message is intended to act as an interlock to make certain that the operator is aware that the LOAD PARAMETER TEST function is about to begin.

- Press the F3 key. One of three displays will result.
- ◇ If the NVRAM PROTECTION switch is in the “ON” position, the PCDU will flash the following message:

```
NVRAM protected
(press ESC)
```

- In this case, press the ESC key. Move the NVRAM PROTECTION switch to the “OFF” position, and restart the Self-Tune procedure.
- ◇ If the Power Conversion Unit had declared a severe fault, the PCDU would display the following message:

Severe Fault . . .
(press ESC)

Severe faults can only be cleared by pressing the RESET button or by cycling power to the drive and replacing the bad component if applicable.

- Press ESC to return to the top level display:

PCU SELF-TUNE
(Press ENT) T997

- ◇ If the NVRAM PROTECTION switch is in the “OFF” position, and there are no severe faults, the PCDU will begin the parameter measurements. The PCDU will display:

Measuring motor
parameters . . .

The parameter measurements will complete after a few seconds, and the PCDU will display:

Measurement done
(press ESC)

- Move the NVRAM PROTECTION switch to the “ON” position. Press the ESC key. The PCDU returns to the top level display:

PCU SELF-TUNE
(Press ENT) T997

**Diagnostics
(Function # 998)**

The drive has built-in diagnostic routines that can be performed via the PCDU. The Power Conversion Unit diagnostic routines are able to test for three failure modes. The first test that the Power Conversion Unit performs is a test of the three line fuses. Assuming the three line fuses are OK, the Power Conversion Unit then performs a test for shorted SCRs/doubler packs. If this test indicates no shorted SCRs/doublers, the Power Conversion Unit then tests for open SCRs by passing current through the forward bridge followed by the reverse bridge. The results of each test are displayed on the PCDU after each test is completed.

WARNING

Current is circulated through the armature circuit during the Power Conversion Unit Diagnostics function. The Power Conversion Unit will reduce the field current to zero on motors with a shunt field in order to minimize motor rotation. However, a PERMANENT MAGNET motor must have its shaft locked mechanically prior to running the Power Conversion Unit Diagnostics. If the Power Conversion Unit detects significant motor voltage during the test, the Power Conversion Unit Diagnostics function will abort.



Select the Power Conversion Unit Parameter Measurement function in one of two ways:

1. Scrolling

- Press the TST key, then repeatedly press the INC or DEC key until the PCDU displays:

```
PCU Diagnostics
(Press ENT) T998
```

This display shows the description of function # 998 on the top line. The bottom line displays a prompt to press the ENT key as well as the function number (998) currently being used. The “T” preceding “998” indicates that this function code is part of the TEST menu.

- Press the ENT key.

OR

2. Direct Access

- Enter the appropriate function number (998) from the top level of any menu display. The display changes to:

```
Enter Function
Number : 998
```

- Press the ENT key. The PCDU displays:

```
PCU Diagnostics
(Press ENT) T998
```

- Press the ENT key.



Once the Power Conversion Unit Diagnostic function has been accessed, the PCDU will display:

Press F3 to
start PCU tests.

This message is intended to act as an interlock to make certain that the operator is aware that the PCU DIAGNOSTICS function is about to begin.

- Press the F3 key. The Power Conversion Unit will begin the component testing.

Various messages describing the progress of the testing will appear. After the testing is complete, the PCDU displays the message “(press ESC)” on the bottom line. The top line will display one of several messages depending on the result of the tests.

- ◇ The PCDU displays the following if it detects one or more blown fuses:

Bad Fuses : F1 F2 F3
(press ESC)

The “F1”, “F2”, and “F3” designators annunciate which fuses are bad. For example, if fuse F2 is bad, the display will be:

Bad Fuses : F2
(press ESC)

- Press the ESC key. The display changes to:

Failure Detected
(press ESC)

- Turn the power off and replace the blown fuse(s) before continuing.

- ◇ The PCDU displays the following if it detects one or more shorted SCRs:

Shorted : 123456
(press ESC)

The “1”, “2”, “3”, “4”, “5”, and “6” designators annunciate which of the SCR/doubler packs is shorted. The following table links the number displayed with the actual failed SCR or doubler pack. Refer to the Schematic Diagram for the location of the component.

<u>NUMBER ON PCDU</u>	<u>SHORTED SCR/DOUBLER PACK</u>
1	4F OR 1R is shorted
2	6F OR 3R is shorted
3	2F OR 5R is shorted
4	1F OR 4R is shorted
5	3F OR 6R is shorted
6	5F OR 2R is shorted

- Press the ESC key. The display changes to:

Failure Detected
(press ESC)



- ◇ The PCDU displays the following if it detects one or more open SCRs on the forward power bridge:

```
Open Fwd 123456
  (press ESC)
```

The “1”, “2”, “3”, “4”, “5”, and “6” designators annunciate which of the SCRs is open. It is also possible that the indication of a faulty SCR is due to its gate lead being disconnected.

A similar display exists for the reverse power bridge, with “Rev” appearing in place of “Fwd” in the message.

- Turn the power off and replace the open SCR(s) before continuing.

When the Power Conversion Unit Diagnostics detects a faulted component, the drive will continue to operate, but the Power Conversion Unit generated fault will not allow it to turn a motor. The last display of the Power Conversion Unit Diagnostic routine if a fault was detected will be:

```
Failure Detected
  (press ESC)
```

- Press the ESC key. The Digital Control Unit (DCU) will continue to operate normally, although the Power Conversion Unit (PCU) will not. The PCDU will display the top level screen for this function:

```
PCU Diagnostics
  (Press ENT) T998
```



- ◇ If all tests of the line fuses, and SCRs indicate no failures, the PCDU will display:

All tests passed
(press ESC)

- Press the ESC key. The PCDU displays the top level screen for this function:

PCU Diagnostics
(Press ENT) T998

**The PCU Hex
Monitor / Function
996**

Function # 996 is a diagnostic function reserved for use by MagneTek personnel. The top level display for this function is:

PCU Hex Monitor
(Press ENT) T996

**The DCU Hex
Monitor / Function
997**

Function # 999 is a diagnostic function reserved for use by MagneTek personnel. The top level display for this function is:

DCU Hex Monitor
(Press ENT) T999

**FORCING (FRC)
MENU**

All PAC blocks send their output to, and acquire their input from, fixed locations during normal running operation. These locations used during normal running operation are referred in the Help menu as the normal addresses. During troubleshooting, however, it may be desirable to “force” an input or output of a PAC block to a certain value independent of its normal source. In this situation, the PAC block obtains its input or output from a forcing address. An example of this might be to force a logic input (LOGI block) to a certain state to simulate a RUN or STOP push button being pressed on a operator console station without actually pushing the button. It is also possible to simulate a numeric input (NUMI block) from a thumbwheel switch, whether or not the physical hardware is actually present. The outputs of certain PAC blocks may also be forced. This feature might be used to test lamps (LOGO blocks), relays (LOGO blocks) or analog meters (NUMO blocks) that are controlled by the drive. The seven (7) types of PAC blocks that can be forced are the LOGI, LOGO, NUMI, NUMO, REFO, RDCI, and TACH blocks. Attempts to force any other type of block will result in an error. The following is a description of how to force a PAC block’s input or output via the PCDU.

WARNING

Forcing should not be attempted by anyone who does not understand the drive PAC's program and the operational results of forcing.

Due to the potentially hazardous nature of Forcing, a password is required. The prompt for the password will occur under certain conditions. It will always occur the first time Forcing is attempted after a power-up. The password will not need to be re-entered again if it has been less than 30 minutes since Forcing was last performed.

WARNING

All forced I/O will return to their non-forced state after 5 seconds if the PCDU is unplugged from the drive.

- Press the FRC key to enter the Forcing menu. The PCDU displays:

Forcing mode
(Press ENT) * FRC

- Press the ENT key as indicated by the display. The PCDU will display the following:

Enter password :



The Password is provided at the time of order entry to the customer's cognizant drives authority.

- Enter the password by using the shift (SHF) key. The PCDU will display the following message if the password entered was invalid or it was not entered correctly:

INVALID PASSWORD
(Press ESC)

- Press the ESC key if the "INVALID PASSWORD" message appears. Start process again from the following display:

Enter password :

If the password was entered correctly or if there is no need for the password, the PCDU will display:

F1 = No Rotation
F2 = Allow Rotation

- Press the F1 key if motor rotation is not desired, or F2 if motor rotation is acceptable. After F1 or F2 is pressed, the PCDU displays:

F1 = Enter Block #
F2 = Reset F3 = List



The F1 key is used to enter/modify data for a particular PAC block. The F2 key is used to make EVERY PAC block use its normal (un-forced) data. The F3 key is used to obtain a list of all PAC blocks that are being forced.

- Press the F2 key. All PAC blocks will reset to their “normal/un-forced” state. The PCDU will display the following:

```
PAC block reset
(Press ESC)
```

- Press ESC. The PCDU will return to the following display:

```
F1 = No Rotation
F2 = Allow Rotation
```

When the F1 Key is pressed

When the F1 key of the following screen is pressed, the PCDU steps will be as indicated below:

```
F1 = Enter Block #
F2 = Reset    F3 = List
```

- Press the F1 key. The PCDU displays:

```
Enter Blk :
Old Blk [00000]
```

This display shows the previous (old) PAC Block number that was being forced and prompts the operator to enter a new block number. If the “ENT” key is pressed, the “old” block number within the square brackets is used. If a new block number is desired, simply enter the number via the



keypad. At the first keystroke, the display will show that digit with four leading zeros; each additional keystroke will add a digit at the right and drop one leading zero. The block numbers used in the example that follows are for illustration only. A typical display will be:

```
Enter Blk : 00123
Old Blk  [00000]
```

- Press the ENT key to save this new PAC block number.

At this time, an internal check is made to insure that the block number is a valid LOGI, LOGO, NUMI, NUMO, REFO, RDCI or TACH block. If the PAC block does not exist, the PCDU displays:

```
Non-existent blk
(Press ESC)
```

- Press the ESC key. Start process again from the following screen:

```
Enter Blk :
Old Blk  [00123]
```

If the block exists, but is not a forcible block, the PCDU displays:

```
Non-forcible blk
(Press ESC)
```

- Press the ESC key. Start again from the following screen:

```
Enter Blk :
Old Blk  [00123]
```




If a valid forcible block number was entered, the PCDU will display the following screen:

F1 = Set New Val F2 = Force F3 = NORM

This display indicates that the operator must press either F1, F2, or F3. The F1 key is used to enter a new Forcing Value for the selected block. The F2 and F3 keys are used to choose whether the selected block will get the forcing value or the normal value. When the F2 = FORCE flashes, the block is getting the forced value. When the F3 = NORM flashes, the block is getting the normal value.

If the F1 key is pressed, the PCDU will display either a numeric (NUMI, NUMO, REFO, TACH, RDCI) or a logical PAC block (LOGI, LOGO).

Example:

For this example, a NUMI and a LOGO block will be used.

- Press the F1 key. The PCDU display will be:

(NUMI PAC BLOCK)

NUMI Block 00200 55.

(LOGO PAC BLOCK)

OR

LOGO Block 00444 OFF

This display shows the block type (NUMI or LOGO) followed by the block number



(00200 or 00444) on the top line. The current value of the forcing data is shown on the bottom line.

- Press the ENT key to change the data. The top line of the display will flash.

Numeric values are entered via the numeric keypad, while logical states are entered via the INC or DEC key. The INC key will set the state to “ON” and the DEC key will set the state to “OFF”.

- Enter the new forcing value, or press the INC or DEC key. The display will change to:

NUMI Block 00200 100

OR

LOGO Block 00444 ON

The operator at this point can press either the ENT, CLR, or ESC key.



- Pressing the ENT key will accept the data in the display. The PCDU will display the value just entered:
(NUMI PAC BLOCK)

NUMI Block 00200 100

(LOGO PAC BLOCK)

OR

LOGO Block 00444 ON

- After the ENT key, press the ESC key to obtain the following display:

F1 = Set New Val F2 = Force F3 = NORM

- Remember that to activate the Forcing mode the F2 key must be pressed, and the “ F2 = FORCE ” will flash. If normal values are to be used, F3 should be selected, and the “ F3 = NORM ” will flash.
- Pressing the CLR key will erase the new data for the selected block, or revert back to its original selected state for logical blocks:

(NUMI PAC BLOCK)

NUMI Block 00200

(LOGO PAC BLOCK)

OR

LOGO Block 00444 OFF



- Pressing the ESC key will exit the Forcing mode without altering anything that has not been changed up to this point. The PCDU will return to the screen showing the initial value for the selected PAC block:

(NUMI PAC BLOCK)

NUMI Block 00200
55.

(LOGO PAC BLOCK)

OR

LOGO Block 00444
OFF

Note: When the ESC key is pressed repeatedly in any menu, the PCDU will back up all the way to the top greeting message. The FRC menu is an exception to this rule. This is done to minimize the possibility of the operator leaving the I/O in the forcing mode without knowing it. If the ESC key is pressed repeatedly and there is at least one I/O currently being force, the PCDU will display the following screen:

Forcing active
(Press F3 key)

This is how the PCDU informs the operator that there is at least one PAC block in the forcing state. It is assumed that the operator has read the “Forcing active...” message and therefore is aware of this fact after the F3 key is pressed.



Doc. No. & Subject: TM 6305 Portable Control/Display Unit

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