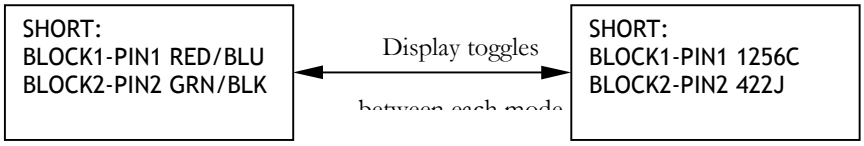
EPROM Version 6.000 Specification

Dynalab TEST SYSTEMS

Current EPROM Version:	***6.000***	***256XL EPROM Part Number:***	***5280303***
EPROM Release Date:	***9/8/99***	***1024XL EPROM Part Number:***	***5280304***
Previous EPROM Version:	***5.100***	***1536XL EPROM Part Number:***	***5280305***

Color / Circuit Toggle

When errors are found, the Analyzer now displays both color and circuit information. The display toggles between color information and circuit information until the error has been repaired or until the test is manually advanced. An example is shown below:



The STOP flag must be set to Stop-On-Errors (default mode) to display any error data. If both points have no color assigned, only circuit information is displayed. If both points have no circuit information, only colors are displayed. If no information is available for both colors and circuits, simply Block and Pin information is shown.

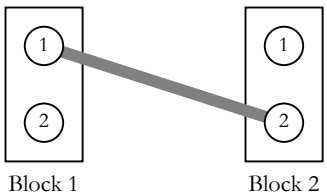
COLORS and CIRCUITS Sequence Commands

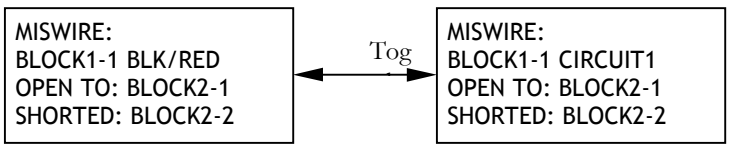
The COLORS and CIRCUITS Sequence Commands have been altered to work with the new Color / Circuits Toggle feature. These Sequence Commands now force the Analyzer to display only color or circuit information.

Miswire Test

Continuity tests (NET and TEST Sequence Commands) have been enhanced. Since many open conditions are the result of miswiring, if an "open" between two points is found, the Analyzer now automatically begins a miswire scan. Analyzer displays the miswire information as shown in the example below.

Example: Wire <u>should</u> connect between Block1, Pin 1 and Block2, Pin1





Analyzer displays both open and miswire information.
Color and circuit information toggle.

The miswire scan is essentially a short scan using only the two open points. If either of the two points is connected to an invalid point (a connection not found in the netlist) the Analyzer will display the miswire. If the miswire is repaired, the next miswire will be shown. If no other miswires are found, an open error will be shown.

During the miswire scan, the Analyzer continues to check the open. When the open condition is repaired, or the user manually advances (presses the START key), the continuity test continues.

The STOP flag must be set to Stop-On-Errors (default mode) to display any error data.

MISWIREON and MISWIREOFF Sequence Commands

Two new Sequence Commands have been added to enable or disable this new error mode. The default mode is Miswire On.

Error Message Enhancements

Messages displayed when errors are found have been enhanced if the error involves a switch, device (diode, resistor, capacitor), or splice. As before, the Analyzer always shows the Names of the Connector and Pin involved.

The STOP flag must be set to Stop-On-Errors (default mode) to display any error data.

Switches

During switch tests, the Analyzer now displays "SWITCH OPEN" for an open during a WPB test and "SWITCH CLOSED" for a short during a UWPB test, instead of "BLK OPEN" or "BLK SHORT".

Devices

During continuity tests (TEST and NET commands), when device errors are found, the Analyzer now displays the text "DIODE" "RESISTOR" "KELVIN" or "CAPACITOR" for the appropriate device. This replaces the text "DIO" "RES" "KEL" and "CAP"

Splices

The Analyzer now displays the splice number in parentheses when displaying an error involving any two points connected to a splice. The splice number is displayed after the text "OPEN" during continuity tests and after the text "SHORT" during short tests (SHORT and ASSEMBLE).

Overwrite File Warning (Main Menu → Transfer)

Whenever transferring files between Analyzer and DynaCard, the Analyzer now warns if the transfer will overwrite an existing file with the same name. This warning displays the compile dates of both programs.

Probe Mode Display (Main Menu → Probe)

In Probe Mode, the Analyzer now displays the text "PROBE MODE" and the point most recently in contact with the probe. The text "CONNECTED" is also displayed when the probe is in contact with an Analyzer test point. Both the

START and STOP keys can be used to exit the probe mode. The UP ARROW is still used to display multiple points in contact with the probe.

Label Printer Test (Setup Menus → Diagnostics → Serial Port → Print Sample)

The Print Sample menu item prints a test label from Serial Port 2 to confirm printer operation. This menu item only operates with Dynalab label printers.

AUTO Sequence Command

The AUTO Sequence Command has always tested for a harness to be removed before automatically continuing the sequence. EPROM version 5.100 improved the AUTO command to test every circuit in the netlist. Previous versions of the AUTO command, however, allowed the operator to end the test by pressing the START key. To allow the AUTO command to be used for security operations, the START key no longer advances the test. The entire harness must now be removed before the test will continue.

Note: The UP ARROW key causes the Analyzer to display errors during the AUTO test – much like the Stop-On-Error mode for other tests.

BKEY Sequence Command

The Branch On Key Switch command performs a test of the Analyzer key switch. If the switch is "on," sequence execution branches to the line number given in the parameter field. If not, the sequence continues with the following command.

Note: Early versions of the XL Series Analyzers were available without a key switch. Analyzers with no key switch will return a value of "on" when using this command. If this command is used for any type of security or authorization checks, Dynalab recommends that the program Sequence be written to first test for an "off" state then to watch for the "on" state. To add key switches to existing Analyzers, contact Dynalab.

RUN Sequence Command

The Run Program command terminates execution of the current program and executes the program listed in the parameter field. If the program listed is not in Analyzer memory, the original program does not terminate and continues, instead, with the next Sequence Command.

Menu Changes

There are a few minor changes to menu wording created by this EPROM. These changes are listed below. In addition, a new menu item –Variable Memory – has been added (see String Variables).

Output Formats Menu (Setup Menus →Formats)

The "Display" submenu (located in the Setup Menus) has been renamed to "Output Formats." The items in this submenu affect how the Analyzer presents information.

Configurations Submenu (Setup Menus →Config)

The "Security" submenu (located in the Setup Menus) has been renamed to "Configurations." The items found in this menu affect basic Analyzer operation.

Error Tone Menu Item (Setup Menus →Formats → Err Tone)

The error tone setting names have been changed from "Loud" and "Soft" to "Long" and "Short" respectively. These names more aptly describe the tones made by the Analyzer when an error is found. Sample tones are now played when a tone is chosen.

String Variables

Several new Sequence Commands and Menu Items have been added to create, change, and output String Variables. Dynalab now allows each Analyzer to store as many as 100 String Variables. Each variable is allowed a name of up to 26 characters and can hold a value of up to 100 characters of text. These variables can be named, displayed, printed and cleared during program execution.

Variable Memory Menu Item (Setup Menus → Configurations → Var Mem)

This new menu item allocates memory needed to store String Variables. Each String Variable requires 128 bytes of memory. Changing this setting affects the amount of memory available to store programs. Each change requires the Analyzer to re-format memory – erasing all existing programs.

STRING Sequence Command

The STRING command has been enhanced to assign text received through a serial port to a String Variable if the incoming text is formatted properly. As with previous EPROMs, the received text must be terminated by a carriage return (ASCII character 13). If the string has the correct syntax, the Analyzer will set the value for a String Variable.

String Variable Assignment Syntax:

`VAR:` *Variable Name~Variable Value*

For example, the following string sets the String Variable "My Variable" to the value "This is my value!"

```
VAR: My Variable~This is my value!
```

String Variable Assignment Rules:

String Variable names can have a maximum of 26 characters and may include the space character. Variables can have a maximum of 100 characters and may include the space character. Variable names are not case sensitive.

If the variable name has already been claimed, the string command will change its value. If the name has not been claimed, an unused variable will be assigned that name and given the value. If an unused name is called out and all of the allocated variables (See Menu Items) have been claimed, the Analyzer will halt program execution and display the message "VARIABLE MEMORY FULL"

String Constant Declaration (Message Table Enhancement)

Strings Constants can also be defined using the Message Table. String Constant are assigned using the following syntax:

String Constant Assignment Syntax:

Variable Name~Variable Value

For example, the following string sets the String Variable "Another Variable" to the value "This is another value!"

```
Another Variable~This is another value!
```

String Variable Assignment Rules:

String Constants are defined using Messages 901-1023 (DOS version of PASS will only allow up to message 999) String Constant names can have a maximum of 26 characters and may include the space character. Variables can have a maximum of 100 characters and may include the space character. Variable names are not case sensitive.

If the same constant name is used more than once in the Message Table (even if the character case is different), the Analyzer will use the first one it encounters.

PMESSAGE / MESSAGE / KMESSAGE / FLASH / KMESSAGE Commands – String Variables

Additional symbols have been added to the Message Sequence Commands to display String Variable values. If the proper syntax is used, the Analyzer will display the variable value in place of the name.

String Variable Display Syntax:

`$"`*Variable Name*`"` is displayed as: *Variable Value*

For example, if there is a string named "My Variable" with the value "This is my value!" the message

`My Variable = $"My Variable"` is displayed as: `My Variable = This is my value`

String Variable Display Rules:

String Variable names can have a maximum of 26 characters and may include the space character. Variables can have a maximum of 100 characters and may include the space character. Variable names are not case sensitive.

If the variable named is not found in variable memory, the Analyzer will search the String Constants for the name. If the name is not found in either location, the Analyzer displays the message "VARIABLE *(variable name)* NOT FOUND" and halts program execution.

PLABEL Command – String Variables

The PLABEL command uses label files created using CAL-Tools software and incorporates them into an Analyzer program. This EPROM adds the new String Variables to the list of allowable symbols. To print a String Variable or String Constant, simply insert the symbol text on the label . The syntax is as follows:

String Variable Label Symbol Syntax:

`$"`*Variable Name*`"` is displayed as: *Variable Value*

For example, if there is a string named "My Variable" with the value "This is my value!" the message

`My Variable = $"My Variable"` is displayed as: `My Variable = This is my value`

String Variable Label Symbol Rules:

String Variable names can have a maximum of 26 characters and may include the space character. Variables can have a maximum of 100 characters and may include the space character. Variable names are not case sensitive.

If the variable named is not found in variable memory, the Analyzer will search the String Constants for the name. If the name is not found in either location, the Analyzer displays the message "VARIABLE *(variable name)* NOT FOUND" and halts program execution.

CLEARVARS Sequence Command

The Clear Variables Sequence Command clears the names and values of all allocated variables in variable memory. (See Variable Memory Menu Item)

String Variable Application – Infrared Printing

One application for the new String Variables is printing from multiple Analyzers to a single printer via infrared transmission. Using a new infrared transmitter product offered by Dynalab, Analyzers on a rotary line can transmit text information such as part number, harness variation type, and operator name to a receiving Analyzer as they pass near each other. The receiving Analyzer stores the text information in String Variables. The receiving Analyzer then prints to an attached Dynalab Barcode Printer and can include the String Variable values on the printed label.