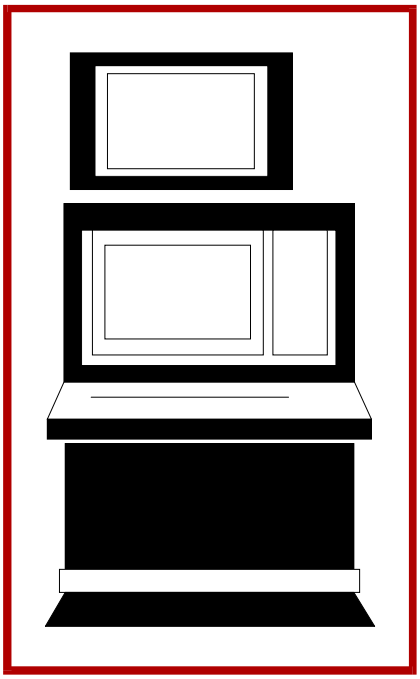
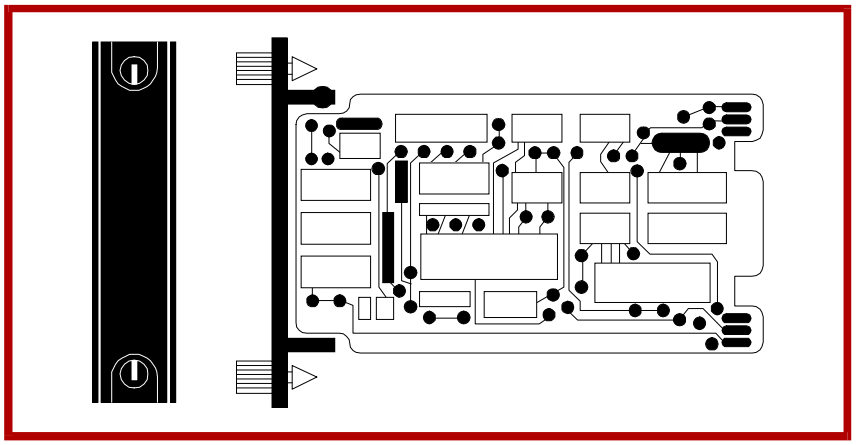
Bailey® infi 90®

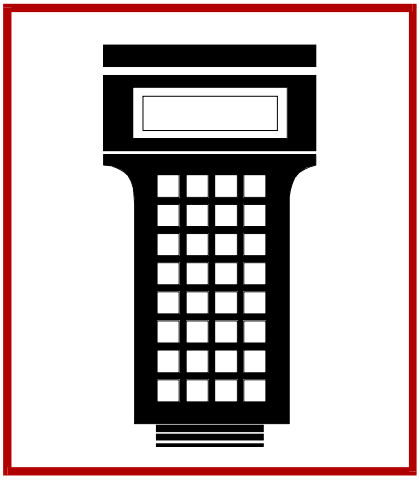
Instruction

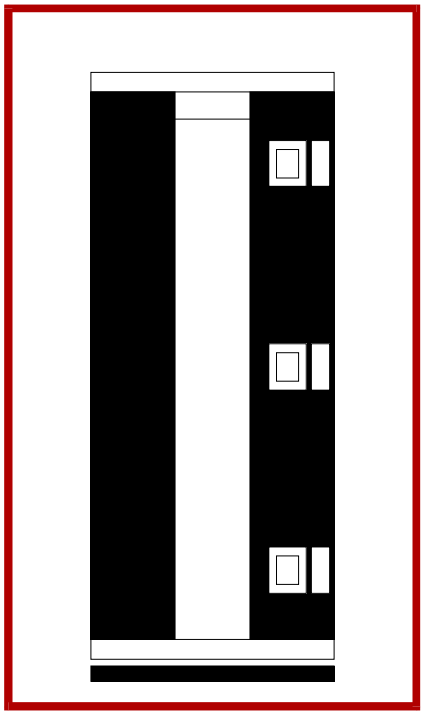
Display Builder Reference

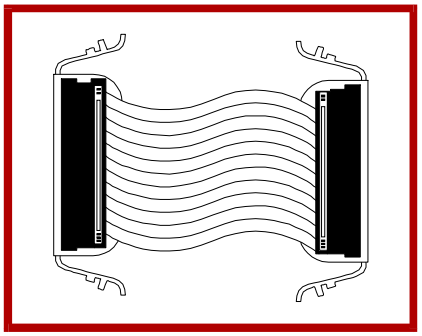
Operator Interface Station

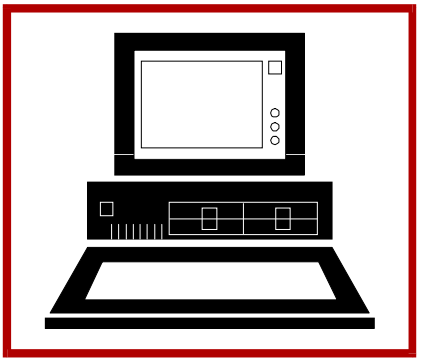












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Preface

This instruction describes the commands that build displays used on operator consoles. The commands are source code level commands found in display source files (***.DT***). Reference this instruction when modifying or building a display using either the console configuration tools (WLDG) program running on an engineering work station or the elementary line editor available from a console.

The instruction describes the commands available in software release J.1 or later for the operator interface station (OIS).

List of Effective Pages

Total number of pages in this instruction is 188, consisting of the following:

Page No.	Change Date
Preface	Original
List of Effective Pages	Original
iii through viii	Original
1-1 through 1-3	Original
2-1 through 2-4	Original
3-1 through 3-151	Original
A-1 through A-15	Original
B-1 through B-6	Original
Index-1	Original

When an update is received, insert the latest changed pages and dispose of the superseded pages.

NOTE: On an update page, the changed text or table is indicated by a vertical bar in the outer margin of the page adjacent to the changed area. A changed figure is indicated by a vertical bar in the outer margin next to the figure caption. The date the update was prepared will appear beside the page number.

Table of Contents

Page

SECTION 1 - INTRODUCTION 1-1
OVERVIEW 1-1
INTENDED USER 1-1
INSTRUCTION CONTENT 1-1
HOW TO USE THIS INSTRUCTION 1-1
DOCUMENT CONVENTIONS 1-2
GLOSSARY OF TERMS AND ABBREVIATIONS 1-2
REFERENCE DOCUMENTS 1-3

SECTION 2 - SOURCE FILES 2-1
INTRODUCTION 2-1
DISPLAY BUILDING OPTIONS 2-1
Console Configuration Utilities 2-1
Elementary Line Editor 2-2
DISPLAY GUIDELINES 2-2
SOURCE FILE FORMAT 2-3

SECTION 3 - DISPLAY COMMANDS 3-1
INTRODUCTION 3-1
COMMAND PARAMETERS 3-1
COMMANDS 3-3
ac (arc) 3-4
as 82 (alarm summary) 3-4
as 83 (alarm summary) 3-7
at (append text) 3-10
bb (begin body) 3-10
bc (background color) 3-11
bd 126 (block details display) 3-11
bm (begin metafile) 3-12
bp (begin picture) 3-12
ca (closed arc) 3-13
cc (circle) 3-13
ch (character height) 3-14
cr (clip rectangle) 3-14
cs (character space) 3-15
ea 56 (alarm/quality status) 3-15
ea 64 (node status - type and configuration error) 3-17
ea 65,50 (node status - short form status error) 3-18
ea 65,51 (node status - long form off-line error) 3-18
ea 65,52 (node status - long form module error) 3-19
ea 65,53 (node status - long form communications error) 3-19
ea 65,54 (node status - long form node status error) 3-20
ea 68,32 (module status - type and configuration error) 3-20
ea 68,71 (module status - enhanced type and configuration error) 3-21
ea 69 (module status - mode) 3-21
ea 70 (module status - error indicator) 3-22
ea 93 (device status) 3-22
ea 114 (alarm state) 3-23
ec 33 (alarm comment) 3-23
ec 34 (tag name) 3-24
ec 35 (tag descriptor) 3-25
ec 36 (customer identifier) 3-25

Table of Contents (continued)

Page

SECTION 3 - DISPLAY COMMANDS *(continued)*

ec 37 (logic state descriptor) 3-26
ec 38 (engineering unit) 3-26
ec 39 (alarm limit - high or low) 3-27
ec 39 (alarm limits - high and low) 3-28
ec 40 (scale limit - high or low) 3-29
ec 40 (scale limits - high and low) 3-30
ec 41 (alarm ticks - high and low) 3-31
ec 63 (node status - number) 3-31
ec 66,51 (node status - node text) 3-32
ec 66,52 (node status - module text) 3-32
ec 66,53 (node status - communication system text) 3-33
ec 66,54 (node status - node status text) 3-33
ec 67 (module address) 3-34
ec 96 (device type) 3-34
ec 97 (device number) 3-35
ec 104 (alarm group) 3-35
ec 105 (DANG reference value) 3-36
ec 106 (DANG bar graph pivot point - tick mark) 3-37
ec 124 (text string length - console) 3-38
ec 125 (text string length - function block) 3-38
ec 132,32 (text string - I/O subtype indicator) 3-39
ed 33 (alarm comment) 3-39
ed 37 (logic state descriptor) 3-40
ed 42 (value) 3-40
ed 43 (output indicator) 3-41
ed 44 (RMCB feedback indicator) 3-42
ed 44 (RCM feedback indicator) 3-43
ed 45 (set permissive indicator) 3-43
ed 46 (RCM override indicator) 3-44
ed 47 (station mode - type 1) 3-44
ed 48 (station status - type 1) 3-45
ed 49 (moving value) 3-45
ed 50 (dynamic bar) 3-46
ed 49 (moving value) *3-46*
ed 51 (dynamic pointer) 3-47
ed 54,45 (analog dynamic symbol) 3-48
ed 54,46 (digital dynamic symbol) 3-49
ed 54,45 (analog dynamic symbol) *3-49*
ed 54,47 (advanced digital dynamic symbol) 3-50
ed 54,46 (digital dynamic symbol) *3-50*
ed 54,49 (advanced analog dynamic symbol) 3-51
ed 54,49 (advanced analog dynamic symbol) *3-52*
ed 54,56 (MSDD dynamic symbol - current state) 3-53
ed 54,57 (MSDD dynamic symbol - requested state) 3-54
ed 54,57 (MSDD dynamic symbol - requested state) *3-55*
ed 54,58 (exception report discrete dynamic symbol) 3-56
ed 57 (tracking indicator) 3-59
ed 58 (DD or MSDD override) 3-59
ed 59 (feedback indicator) 3-60
ed 60 (DD or MSDD mode) 3-60
ed 61 (MSDD output indicator) 3-61
ed 62 (MSDD control override) 3-61
ed 64 (node status - type and configuration error) 3-62

Table of Contents (continued)

Page

SECTION 3 - DISPLAY COMMANDS *(continued)*

ed 65,50 (node status - short form error) 3-62
ed 65,51 (node status - long form off-line error) 3-63
ed 65,52 (node status - long form module error) 3-63
ed 65,53 (node status - long form communications error) 3-64
ed 65,54 (node status - long form node status error) 3-64
ed 68,32 (module status - type and configuration error) 3-65
ed 68,71 (module status - enhanced type and configuration error) 3-65
ed 69 (module status - mode) 3-66
ed 70 (module status - error indicator) 3-66
ed 71 (module status - status bytes) 3-67
ed 74 (station mode - type 2) 3-67
ed 75 (station status - type 2) 3-68
ed 76 (station tracking - type 2) 3-68
ed 77 (station mode - type 3) 3-69
ed 79 (text selector) 3-69
ed 80,33 (RMCB bad start text) 3-70
ed 80,34 (RMCB fault indicator text) 3-70
ed 81 (RMCB permissive indicator) 3-71
ed 92 (RMCB error code text) 3-72
ed 94 (device status - status bytes) 3-72
ed 95 (device status - description) 3-73
ed 98 (deviation bar - type 1) 3-73
ed 98 (deviation bar - type 1) *3-74*
ed 99 (deviation bar - type 2) 3-75
ed 100 (red tag status - text) 3-76
ed 99 (deviation bar - type 2) *3-76*
ed 101 (module status - enhanced status) 3-77
ed 102 (red tag status - outline) 3-78
ed 103 (exception report text) 3-79
ed 107 (DANG constrained value indicator) 3-80
ed 108 (DANG bidirectional dynamic bar) 3-81
ed 109 (value source and lock indicator) 3-82
ed 110 (DANG variable alarm type indicator) 3-82
ed 111 (no report indicator) 3-83
ed 112 (quality override indicator) 3-83
ed 113 (alarm priority) 3-84
ed 114,32 (alarm state) 3-85
ed 114 (next highest or next lowest alarm state) 3-85
ed 115 (quality) 3-86
ed 116 (next alarm limit) 3-87
ed 117 (moving next alarm limit) 3-88
ed 118 (moving next alarm limit tick marks) 3-89
ed 119 (DADIG alarm state latch indicator) 3-90
ed 120 (text string) 3-90
ed 121 (text string - interlock indicator) 3-91
ed 122 (text string - truncation indicator) 3-91
ed 123 (text string - received length) 3-92
ed 128 (value without alarm/quality color options) 3-92
ed 129 (logic state descriptor without alarm/quality color options) 3-93
ed 130 (text string without alarm/quality color options) 3-93
ed 131,32 (text string - override enable status) 3-94
ei 107,82 (touch point select - display) 3-94
ei 107,83 (touch point select - control) 3-95

Table of Contents (continued)

Page

SECTION 3 - DISPLAY COMMANDS (continued)

ei 107,85 (touch point select - soft key) 3-96
ei 107,86 (touch point select - trend) 3-97
ei 107,87 (touch point select - alarm summary) 3-97
ei 107,88 (touch point select - alarm summary primary display) 3-98
ei 107,90 (touch point select - pop up) 3-98
ei 107,91 (touch point select - pop up select with tag index substitution) 3-99
ei 107,95 (touch point select - block details) 3-100
ei 107,96 (touch point select - XY plot) 3-100
ei 107,97 (touch point select - tabular trend) 3-101
ei 107,107 (touch point select - custom trend) 3-102
ei 107,113 (touch point select - user task activation) 3-103
ei 107,113 (touch point select - multiwindow display activation) 3-104
ei 107,115 (touch point select - control/action) 3-104
ei 107,116 (touch point select - @aGlance/IT user task activation) 3-107
ei 108,82 (key select - display) 3-108
ei 108,83 (key select - control) 3-109
ei 108,85 (key select - soft key) 3-110
ei 108,86 (key select - trend) 3-111
ei 108,87 (key select - alarm summary) 3-111
ei 108,88 (key select - alarm summary primary display) 3-112
ei 108,90 (key select - pop up) 3-112
ei 108,91 (key select - pop up with tag index substitution) 3-113
ei 108,95 (key select - block details) 3-114
ei 108,96 (key select - XY plot) 3-114
ei 108,97 (key select - tabular trend) 3-115
ei 108,107 (key select - custom trend) 3-115
ei 108,113 (key select - user task activation) 3-116
ei 108,113 (key select - multiwindow display activation) 3-117
ei 108,116 (key select - @aGlance/IT user task activation) 3-117
em (end metafile) 3-118
ep (end picture) 3-118
es (symbol) 3-119
et 53 (trend element) 3-119
et 152 (tabular trend element) 3-121
et 153 (custom trend element) 3-123
et 154 (XY plot element) 3-125
ex (VDC extent) 3-127
fc (fill color) 3-127
is (interior style) 3-128
lc (line color) 3-128
lt (line type) 3-129
lw (line width) 3-129
mc (marker color) 3-130
ms (marker size) 3-130
mt (marker type) 3-131
pe (program escape) 3-131
pg (polygon) 3-132
pl (polyline) 3-132
pm (polymarker) 3-133
rf (reference) 3-133
rm (remark) 3-133
rs (range symbol) 3-134
rt (rectangle) 3-137

Table of Contents (continued)

Page

SECTION 3 - DISPLAY COMMANDS (continued)

sm (security mask) 3-138
sn (symbol name) 3-138
su 152,101 (tabular trend - high limit of column) 3-139
su 152,102 (tabular trend - low limit of column) 3-139
su 152,103 (tabular trend - maximum of column) 3-140
su 152,104 (tabular trend - minimum of column) 3-140
su 152,105 (tabular trend - average of column) 3-141
su 152,106 (tabular trend - summation of column) 3-141
su 152,110 (tabular trend - high and low limits) 3-142
su 153,107 (custom trend - time scale) 3-143
su 153,108 (custom trend - time cursor) 3-144
su 153,109 (custom trend - control status) 3-145
su 153,110 (custom trend - index attributes) 3-145
su 154,110 (XY plot - high and low limit) 3-147
su 154,111 (XY plot - value per grid division) 3-148
su 154,112 (XY plot - plot descriptor) 3-149
su 154,114 (XY plot - reference line value) 3-150
tc (text color) 3-151
tx (text) 3-151
%% (end of input) 3-151

APPENDIX A - EXAMPLE SOURCE FILES A-1

INTRODUCTION A-1
VALVE SYMBOL A-1
ANALOG ELEMENT A-1
DIGITAL CONTROL STATION ELEMENT A-2
MULTI-STATE DEVICE DRIVER ELEMENT A-3
ALARM SUMMARY DISPLAY A-3
STANDARD TREND DISPLAY A-5
CUSTOM TREND DISPLAY A-6
TABULAR TREND DISPLAY A-7
TAG OR TREND SOURCE XY PLOT DISPLAY A-9
MFC DATA SOURCE XY PLOT ELEMENT A-10
SYSTEM STATUS OVERVIEW DISPLAY A-11

APPENDIX B - OPERATOR KEYBOARD KEY CODES B-1

INTRODUCTION B-1
KEYCODE TABLE B-1

List of Tables

No.	Title	Page
1-1.	Glossary of Terms and Abbreviations	1-2
1-2.	Reference Documents	1-3
3-1.	Key Codes	3-1
3-2.	Color Index Codes	3-1
3-3.	Common Command Parameters	3-2
3-4.	Tags	3-3
3-5.	Line Option and Character Height Combinations	3-6
3-6.	Alarm Summary Filtering Options	3-9
3-8.	Alarm Status Descriptors (Two Character)	3-16
3-9.	Alarm Status Descriptors (Single Character)	3-16
3-7.	Quality Indicators	3-17
3-10.	RMCB Feedback Signal to Feedback Indicator Relationship	3-42
3-11.	Exception Report Text - Option Codes	3-56
3-12.	Alarm Priority Descriptors	3-84
3-13.	Next High and Low Alarm State	3-86
3-14.	Soft Key Parameters	3-96
3-15.	Advanced Dynamic Symbol Codes	3-135
B-1.	Key Code Descriptions	B-1

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SECTION 1 - INTRODUCTION

OVERVIEW

The console uses a variety of summary, interactive and informational displays to convey information about process operations and results of control actions to an operator. The displays include summaries, graphic overviews, graphic details and group displays. Displays are not console specific. A display on one console can be transferred and used on other consoles. This instruction describes the commands used to build these displays.

INTENDED USER

This instruction is intended to be used as a reference when creating or modifying displays for a console. This instruction assumes the reader is familiar with installation, configuration and operation of operator consoles. It also assumes the reader has a general knowledge of the INFI 90® OPEN Strategic Process Management System.

INSTRUCTION CONTENT

Introduction Provides an overview of this instruction, a list of reference documents, and a glossary of terms and abbreviations.

Source Files Explains the options for building displays, guidelines to follow when creating a display and source file format.

Display Commands Describes the commands that create a display and enable the capabilities of the display.

This instruction includes a Table of Contents, List of Figures, List of Tables, and Index giving several options to locate specific information quickly. Appendices supplement information presented in the individual sections.

HOW TO USE THIS INSTRUCTION

Refer to Section 2 for an explanation of methods to create or modify a display source file (***.DT***) and for guidelines to follow when creating a source file.

Refer to Section 3 for an explanation of the commands that define each element or capability built into a display.

Read the ***notes*** in text. Notes provide:

- Additional information.

- Information that should be considered before performing a certain operation or function.

DOCUMENT CONVENTIONS

This document uses standard text conventions throughout to represent keys, user data inputs and display items:

KEY Identifies a keyboard key.

Example: Press **ENTER**.

Display item Any item that displays on the screen appears as italic text in this document.

Example: *MANUAL.*

The document uses specific text conventions for commands:

BOLD Identifies any part of a command line that is ***not*** optional or variable and must be entered exactly as shown.

italic Identifies a variable parameter in a command line.

[ ] The brackets indicate a parameter is optional. Text within the brackets still follows the previously described conventions.

Examples: **ei 108,87,***key1,key2,x-coord,y-coord*
ELE *volume filename.ex*

GLOSSARY OF TERMS AND ABBREVIATIONS

Table 1-1 is a glossary of terms and abbreviations used in the instruction. It contains those terms and abbreviations that are unique to Elsag Bailey or have a definition that is different from standard industry usage.

Table 1-1. Glossary of Terms and Abbreviations

Term	Definition
Block address	A number designating a specific function block within a module.
Display element	A discrete element used in creating a process display. Station faceplate, trend, alarm summary, dynamic symbol, and dynamic value are examples of a display element.
EUD	Engineering unit descriptor; a description of an engineering unit used in console configuration (tag list). DEG F, GPM, and LB/HR are some examples.
EWS	Engineering work station.
Exception report	Information update generated when the status or value of a point changes by more than a specified significant amount; abbreviated as XR.
FC	Function code.
Function block	The occurrence of a function code at a block address of a module.

Table 1-1. Glossary of Terms and Abbreviations (continued)

Term	Definition
Function code	An algorithm which manipulates specific functions. These functions are linked together to form the control strategy.
Module address	A unique identifier of a specific device or a communication channel. Refers to Controlway or module bus address.
Tag	Analog or digital process value defined in the console as a control or monitor point.
Trend data	A series of data values collected over time from INFI 90 modules representing the history of a point in the system.

REFERENCE DOCUMENTS

Table 1-2 lists additional documents that are referenced in this instruction.

Table 1-2. Reference Documents

Number	Document Title
I-E96-200	Function Code Application Manual
I-E96-771	Console Configuration Tools
WBPEEUI220757A1	Configuration (40 Series)
WBPEEUI220758A1	File Utilities (40 Series)
WBPEEUI350255A1	Open Data Server/Client

SECTION 2 - SOURCE FILES

INTRODUCTION

This section explains the options for building displays, gives guidelines to follow when creating a display, and shows the source file format.

DISPLAY BUILDING OPTIONS

Either a configuration tool called graphical display configuration tool (GDC) or a utility called elementary line editor (ELE) can be used to create or edit the source files for displays and symbols. The GDC tool is available at an engineering work station running the console configuration tools software. Refer to the ***Console Configuration Tools*** instruction for the procedures to use this tool (Table 1-2 lists the instruction numbers). The ELE utility is available at a console. Refer to the ***File Utilities*** instruction for the procedures to use this utility.

Both the console and the console configuration tools provide a set of standard symbols and display templates. One method of determining the commands required to create a display and to present certain types of information is by viewing the commands or elements in the source files provided. The elements incorporated can be viewed using the GDC tool. The commands defining each element can be viewed using the elementary line editor.

Console Configuration Utilities

The preferred method for creating a display is to use the screen oriented display generator. The GDC tool is an interactive display editing program. It automatically enters the required commands and their parameters for each display element based on user entry. It also provides a screen presentation while creating the display. The GDC tool can be used to create new or edit existing displays. The set of standard display templates and symbols provided with the console configuration tools can be used as is or can be modified.

> **NOTE:** If a standard display template or symbol is to be modified, it is suggested that the original file be first copied and renamed. Make the modifications to the new, renamed file rather than the original.

A display or symbol created using the GDC tool and transferred to the console resides in a display source file (***.DT***). The *Display Generator* function of the console is used to assemble and store the file to its hard disk as a ***.DU*** file (i.e., display) or ***.DL*** file (i.e., symbol). Refer to the ***Configuration*** instruction for the procedures to use the display generator (Table 1-2 lists the instruction numbers).

Elementary Line Editor

The elementary line editor can be used to create or modify a display source file (***.DT***). Using this utility, a command for each element or feature incorporated into the display or symbol must be entered as a single line of code. The commands define display interactives, static data, dynamic values and symbols, control points, touch point selects, key selects, etc.

Using the ELE function requires some prior work to map out the x,y coordinate of each element of the display or symbol. One method of doing this is by drawing the display as it should appear at the screen on a grid having coordinates ranging from 400,400 to 9600,7200. The coordinates for a drawn element can then be transferred to the display source file as the x,y coordinate parameters of a command.

As with the GDC tool, a display source file must first be assembled into a ***.DU*** file and ***.DL*** files using the *Display Generator* function before it can be used in operations. Refer to the Configuration instruction for the procedures to use the display generator (Table 1-2 lists the instruction numbers).

DISPLAY GUIDELINES

Some guidelines to follow when creating a source file include:

1. File limits are 2,500 70-character line entries per display file.

2. User coordinate space for creating displays is 400,400 to 9600,7200.

3. If any command has an x or y-coordinate value of zero, that element does not appear on the display.

4. Commands and parameters should be contained on one line. If not, use the continuation character /.

5. Commands must be entered in lower case characters.

6. Text color, line color, fill color and marker color must appear in this order as the first elements in the symbol file immediately after the **bb** (begin body) command. For dynamic symbols, the first occurrence of each will be overwritten by dynamic symbol changes.

7. A non good symbol takes precedence over an alarm state and value in a dynamic symbol. Generally the order of appearance is quality, alarm, then value. A symbol without leading color commands changes color according to the color parameters of a dynamic symbol escape.

8. When using circle (**cc**) and polygon (**pg**) commands that need to be filled, the following commands and order apply:

is - interior style.

fc - fill color.

lc - line color (only if perimeter is on).

cc or **pg** - circle or polygon.

If there is another **pg** or **cc** command in the file and it is not to be filled, add an **is** command set to hollow (0) before the next occurrence of the **pg** or **cc** command.

9. Enter all escape types and subtypes in decimal.

10. Generally, any display without escape for control should not contain **pe 124,CONTROL~**. Any menu display that does not require any control action using either **ei 107,83** or **ei 108,83** and has only text and display selects using **ei 107,82** or **ei 108,82** should ***not*** have an escape for control.

11. When defining touch point select commands for use with touch screen, each touch area must be at least 400 × 400 display units separated by 40 units. Touch point areas for mouse or trackball selects must be at least 40 × 40 separated by 40 units.

12. The display generator accepts a comma (,), semicolon (;) or colon (:) as a separator between parameters.

13. A maximum of 20 tags can be referenced in a symbol file called as a pop up using **ei 107,90**; **ei 108,90**; **ei 107,91**; or **ei 108,91**.

SOURCE FILE FORMAT

A display source file requires the following format:

```
bm 0,Name~
bp 0,Name~,0
sm
bb
graphic and escape commands
    •
    •
    •
ep
em
%%
```

A symbol built in a separate source file or as part of a display source file requires the following format:

```
bp 0,Name~,0
sm
bb
rf
graphic and escape commands
    •
    •
    •
ep
%%
```

A pop up symbol built in a separate source file or as part of a display source file requires the following format:

```
bp 0,Name~,0
sm
bb
rf
cr
es
ei
pe 124,CONTROL~
ep
%%
```

SECTION 3 - DISPLAY COMMANDS

INTRODUCTION

This section lists the commands that create the elements and capabilities built into a display or a symbol used in a display. These commands enable console functions and make up the display and symbol source files that eventually become the assembled display used in operations.

COMMAND PARAMETERS

Table 3-1 lists the codes to use in commands to identify keys. If the command contains a *key* parameter, use one of the codes from this table.

Table 3-1. Key Codes

Key	Code
PREV PAGE	33426
NEXT PAGE	33434
ESC	33663
ENTER	33659
HELP	33415
0-9	48 to 57 (ASCII)
A-Z	65 to 90 (ASCII)

Table 3-2 lists the codes to use in commands to specify a color. If the command contains a *color* parameter, use one of the codes from this table. For each color, there are four shades available making the total number of available colors 64 (0 to 63). Add 128 to a color code to make it a flashing color.

Table 3-2. Color Index Codes

Index	Color	Index	Color
0	Black	8	Orange
1	White	9	Yellow-green
2	Red	10	Green-cyan
3	Green	11	Cyan-blue
4	Blue	12	Blue-magenta
5	Cyan	13	Magenta-red
6	Magenta	14	Dark gray
7	Yellow	15	Light gray

Table 3-3 explains some common terms used to describe parameters of commands.

Table 3-3. Common Command Parameters

Parameter	Description
almcolor	Alarm color; index number of a color to use as an alarm color (refer to Table 3-2). Use the color to identify an alarm condition.
bgcolor	Background color; index number of a color to use as the background color (refer to Table 3-2). Use this to set the background color for information.
charlength	Character string length; number of characters to allow for a character string. A valid character length depends on the maximum number of characters returned by the command. The maximum range is from 1 to 255. Use the starting character (*startchar*) parameter to break a character string to continue it on another line.
charsize	Character size; expressed in display units (or VDC extent). A valid character size is: 124 = single height character (standard) 248 = double height character 372 = triple height character **NOTE**: When the 4.5 mm character font is enabled on a 40 series console, the 372 display unit character size will produce 4.5 mm characters instead of the standard 372 display unit characters. Refer to the discussion on system configuration in the ***Configuration*** instruction for information on enabling 4.5 mm characters (Table 1-2 lists the instruction numbers).
decdigits	Number of digits from 0 to 4 that are to appear after a decimal point.
fgcolor	Foreground color; index number of a color to use as the foreground color (refer to Table 3-2). Use this to set the foreground color for information.
key1	First key; ASCII character code of an alpha or numeric key, or a designator of a specialized key such as ESC or HELP (refer to Table 3-1). This defines the alpha or numeric key to press in a single key select, or the first numeric key in a two-key select sequence.
key2	Second key; ASCII character code of an alpha or numeric key or ENTER (refer to Table 3-1). This defines the second key in a two-key select sequence. If using single key, enter 0.
spacing	Spacing factor; amount of space between characters expressed as a percent of character size (*charsize*).
startchar	Starting character; character position in a text string that is to be the first character displayed. A valid entry for this parameter depends on the number of characters returned by the command. The first character position in a string is 0. This can be used to specify a starting character that is to appear on a new or continuation line when used with the character length (*charlength*) parameter. For example, to have the field present the first character in a returned character string as the starting character, enter 0 as the starting character number. To have the field present the 17th character as the starting character, enter 16.
tag	Tag index number; index number of the tag the command is to associate with. This must be the index number of a tag defined in the tag database.
trend	Trend index number; index number of the trend the command is to associate with. This must be the index number of a trend definition.
x-coord or *xn-coord*	X-coordinate; x-axis position on the display to place the information presented by the command. The default x-coordinate range is from 400 to 9600.
y-coord or *yn-coord*	Y-coordinate; y-axis position on the display to place the information presented by the command. The default y-coordinate range is from 400 to 7200.

COMMANDS

The remainder of this section describes the various commands that can be used to build console displays. The following information is given for each command:

Purpose - describes the purpose and the results of using the command.

Tag support - gives a table listing the tags the command supports (refer to Table 3-4). The shaded tag names are those the command does ***not*** support. Only those commands having a *tag* parameter will include this information. If the command does not, it is not tag related.

Table 3-4. Tags

Term	Definition
ANALOG	Analog exception report tag; works with FC 30, 222, 223.
DAANALG	Data acquisition analog tag; works with FC 21, 22, 23, 80, or 177.
DADIG	Data acquisition digital tag; works with FC 211.
DADIGTL	Data acquisition digital tag; works with FC 129.
DANG	Data acquisition analog tag; works with FC 177.
DD	Device driver tag; works with FC 123.
DEVSTAT	Device status tag for internal use.
DIGITAL	Digital exception report tag; works with FC 45, 224, 225.
INTANG	Internal analog tag.
INTDIG	Internal digital tag.
MSDD	Multi-state device driver tag; works with FC 129.
N90STA	INFI 90 status tag; reads status and problem reports from modules.
RCM	Remote control memory tag; works with FC 62, 99, or 210.
RMCB	Remote motor control tag; works with FC 136.
RMSC	Remote manual set constant tag; works with FC 68.
STATION	Control station exception report tag; works with FC 21, 22, 23, or 80.
TEXT	Text selector tag; works with FC 151.
TEXTSTR	Text string tag; works with FC 194.

Command - gives the command format and describes those parameters that are unique to the command. Refer to Table 3-3 if a description is not given for a parameter. In most cases, an example is included with this information.

Discussion - provides additional information when necessary to help further explain the use and purpose of the command. Not all commands have a discussion section.

ac (arc)

Graphic Primitive

PURPOSE: The arc command defines an open arc defined by a starting, intermediate, and ending coordinate. The attributes of the line creating the arc can be defined using an **lc**, **lt**, and **lw** command.

COMMAND: **ac** *x1-coord,y1-coord;x2-coord,y2-coord;x3-coord,y3-coord*

Parameter	Description
x1-coord,y1-coord	Starting point coordinate.
x2-coord,y2-coord	Intermediate point coordinate.
x3-coord,y3-coord	Ending point coordinate.

Example: **ac 1000,1000;2000,500;3000,1000**

as 82 (alarm summary)

Alarm Summary Element

PURPOSE: The alarm summary command creates an alarm summary element containing alarm entries for tags assigned to a certain alarm group or having a certain priority assignment. A parameter of the command determines whether the element limits the entries by alarm group or priority. In either case, the command can also be set to limit the entries to a specified range only, a list of individuals only, or both range and individual alarm groups or priorities.

COMMAND: **as 82,***subtype,count,start,end,grp/priornums,size,format,x-coord, y-coord,outlinecolor,grp/priorfilt,ackfilt,bkgrdcolor*

Parameter	Description
subtype	32 - range only. 33 - individual groups/priorities only. 34 - range and individual groups/priorities.
count	Number of individual alarm groups/priorities from 0 to 10. Use 0 if *subtype* is 32.
start	Starting alarm group/priority number in a range. Use 0 if *subtype* is 33. The *grp/priorfilt* parameter determines whether this is a group or a priority. A valid entry for alarm group is from 1 to 99, S, or D. When specifying the entire alarm group range, use 1 as the starting group. A valid entry for priority is from 1 to 8.

as 82 (alarm summary) *continued*

Alarm Summary Element

Parameter	Description
end	Ending alarm group/priority number in a range. Use 0 if *subtype* is 33. A valid entry for alarm group is from 1 to 99, S, or D. When specifying the entire alarm group range, use D as the ending group. A valid entry for priority is 1 to 8.
grp/priornums	Individual alarm group or priority numbers. A maximum of ten alarm groups or all priorities can be specified. The *count* parameter determines the number of individual groups or priorities to specify. The *grp/priorfilt* parameter determines whether to specify groups or priorities. Use 0 if *subtype* is 32.
size	32 - full screen 16 lines (100 × 100). 33 - half screen (50 × 100). 34 - quarter screen (25 × 100). 35 - eighth screen (12.5 × 100). 36 - full screen 24 lines (100 × 100).
format	Alarm line format. Use 0 to 4 for the standard line entry formats provided, 5 to 105 for a user-defined line format. Refer to the discussion on the alarm summary in the ***Configuration*** instruction for more information (Table 1-2 lists instruction numbers).
x-coord,y-coord	Lower left corner x,y coordinate of alarm summary element.
outlinecolor	Color to use as the outline color when deselected. Refer to Table 3-2 for color index numbers.
grp/priorfilt	Alarm group or priority filter: 0 - limit entries by alarm group. 1 - limit entries by priority.
ackfilt	Alarm acknowledge filter: 0 - all. 1 - only acknowledged. 2 - only unacknowledged.
bkgrdcolor	Color to use as the background color for alarm summary. Refer to Table 3-2 for color index numbers.

DISCUSSION:

The *size* parameter affects other characteristics of the alarm summary element such as maximum number of alarm entries. Refer to the discussion on the alarm summary in the ***Configuration*** instruction for further explanation. ***ALARM SUMMARY DISPLAY*** in Appendix A gives an example of a source file that uses the **as 82** command.

Table 3-5 shows the line option and character height combinations that can be used with the different element sizes. The line option and character height are defined at the console for a line

as 82 (alarm summary) *continued*

Alarm Summary Element

format. The line format to use in the summary is selected with the *format* parameter.

Table 3-5. Line Option and Character Height Combinations

Element Size	Line Option	Character Height	Number of Alarms	Lines Per Alarm Entry
Full (32)	0	Single (124)	16	2
	0	Double (248)	16	1
	1	Single (124)	8	4
	1	Double (248)	8	2
Half (33)	0	Single (124)	8	2
	0	Double (248)	8	1
	1	Single (124)	4	4
	1	Double (248)	4	2
	2	Single (124)	16	1
Quarter (34)	0	Single (124)	4	2
	0	Double (248)	4	1
	1	Single (124)	2	4
	1	Double (248)	2	2
	2	Single (248)	8	1
Eighth (35)	0	Single (124)	2	2
	0	Double (248)	2	1
	1	Single (124)	1	4
	1	Double (248)	1	2
	2	Single (124)	4	1
Full (36)	2	Single (124)	24	1
	2	4.5 mm (372)	24	1

Example: Summary containing all unacknowledged and acknowledged alarms within a range of alarm groups:

as 82,32,0,1,25,32,0,400,400,4,0,0,8

Summary containing all unacknowledged and acknowledged alarms within specific alarm groups:

as 82,33,5,12,16,33,88,D,32,0,400,400,4,0,0,8

Summary containing all unacknowledged and acknowledged alarms within a range and also specific alarm groups:

as 82,34,3,1,15,99,S,D,32,0,400,400,4,0,0,8

as 82 (alarm summary) *continued*

Alarm Summary Element

To create a complete alarm summary element, additional commands are necessary including:

1. Control select using both key (**ei 108,87**) and touch point (**ei 107,87**).

2. Primary display select using both key (**ei 108,88**) and touch point (**ei 107,88**) for each alarm line entry.

3. Text descriptors (**tx**) for the control select key characters and each primary display select key character.

4. Polyline (**pl**) for the element outline.

as 83 (alarm summary)

Alarm Summary Element

PURPOSE:

The alarm summary command creates an alarm summary element containing alarm entries for tags assigned to a certain alarm group or having a certain priority assignment. A parameter of the command determines whether the element limits the entries by alarm group or priority. In either case, the command can also be set to limit the entries to a specified range only, a list of individuals only, or both range and individual alarm groups or priorities. Unlike the **as 82** command, this command generates a complete alarm summary. Refer to ***as 82 (alarm summary)*** for further explanation.

COMMAND:

as 83,*subtype,keyselect,primkeyselect,size,touchflag,*
primkeyorient,primkeycolor,format,x-coord,y-coord,outlinecolor,
start,end,count,grp/priornums,grp/priorfilt,ackfilt,bkgrdcolor

Parameter	Description
subtype	32 - range only. 33 - individual groups/priorities only. 34 - range and individual groups/priorities.
keyselect	Control select keys. Specify one or two alphanumeric characters (e.g., 1A, A, 2X, etc.). Use 0 if not required.
primkeyselect	Primary display select key. Specify one alphanumeric character (e.g., A, D, etc.). This defines the first primary display select key. The rest of the selectors are generated from this entry. Use 0 if not required.

as 83 (alarm summary) *continued*

Alarm Summary Element

Parameter	Description
size	32 - full screen 16 lines (100 × 100). 33 - half screen (50 × 100). 34 - quarter screen (25 × 100). 35 - eighth screen (12.5 × 100). 36 - full screen 24 lines (100 × 100).
touchflag	0 - no touch points. 1 - touch points.
primkeyorient	0 - key selectors on left of element. 1 - key selectors on right of element.
primkeycolor	Color to use for the primary display key select characters. Refer to Table 3-2 for color index numbers.
format	0 to 4 - standard line formats. 5 to 105 - user-defined line formats. Refer to the discussion on the alarm summary in the ***Configuration*** instruction for further information (Table 1-2 lists instruction numbers).
x-coord,y-coord	Lower left corner x,y coordinate of alarm summary element.
outlinecolor	Color to use as the outline color when deselected. Refer to Table 3-2 for color index numbers.
start	Starting alarm group/priority number in a range. The *grp/priorfilt* parameter determines whether this is a group or a priority. Use 0 if *subtype* is 33. A valid entry for alarm group is from 1 to 99, S, or D. When specifying the entire alarm group range, use 1 as the starting group. A valid entry for priority is from 1 to 8.
end	Ending alarm group/priority number in a range. Use 0 if *subtype* is 33. A valid entry for alarm group is from 1 to 99, S, or D. When specifying the entire alarm group range, use D as the ending group. A valid entry for priority is from 1 to 8.
count	Number of individual alarm groups/priorities from 0 to 10. Use 0 if *subtype* is 32.
grp/priornums	Individual alarm group or priority numbers. A maximum of ten alarm groups or all priorities can be specified. The *count* parameter determines the number of individual groups or priorities to specify. The *grp/priorfilt* parameter determines whether to specify groups or priorities. Use 0 if *subtype* is 32.
grp/priorfilt	Alarm group or priority filter: 0 - limit entries by alarm group. 1 - limit entries by priority.

as 83 (alarm summary) *continued*

Alarm Summary Element

Parameter	Description
ackfilt	Alarm acknowledge filter: 0 - all. 1 - only acknowledged. 2 - only unacknowledged.
bkgrdcolor	Color to use as the background color for alarm summary. Refer to Table 3-2 for color index numbers.

DISCUSSION:

The *size* parameter affects other characteristics of the alarm summary element such as maximum number of alarm entries. Refer to the discussion on the alarm summary in the ***Configuration*** instruction for further explanation.

Refer to Table 3-5 for a listing of line option and character height combinations that can be used with the different element sizes. The line option and character height are defined at the console for a line format. The line format to use in the summary is selected with the *format* parameter.

Table 3-6 shows the results of selecting certain *grp/priorfilt* and *ackfilt* combinations

Table 3-6. Alarm Summary Filtering Options

grp/ priorfilt	ackfilt	Result
0	0	Standard; summary contains selected alarm groups, all alarms.
	1	Summary contains selected alarm groups, acknowledged alarms only.
	2	Summary contains selected alarm groups, unacknowledged alarms only.
1	0	Summary contains selected priorities, all alarms.
	1	Summary contains selected priorities, acknowledged alarms only.
	2	Summary contains selected priorities, unacknowledged alarms only.

Example: Summary containing all unacknowledged alarms:

as 83,32,1A,A,32,0,0,3,0,400,400,4,1,D,0,2,8

Summary of all acknowledged alarms:

as 83,32,1A,A,32,0,0,3,0,400,400,4,1,D,0,1,8

as 83 (alarm summary) *continued*

Alarm Summary Element

Summary containing all acknowledged priority one alarms only:

as 83,33,1A,A,32,0,0,3,0,400,400,4,1,1,1,2,8

Summary containing all unacknowledged priority one and two alarms only:

as 83,33,1A,A,32,0,0,3,0,400,400,4,2,1,2,1,2,8
as 83,32,1A,A,32,0,0,3,0,400,400,4,1,2,1,2,8

at (append text)

Graphic Primitive

PURPOSE: The append text command appends a defined text string to a previous character string. The command can be used to define an additional 69 characters if the original string exceeds the maximum of 69 characters or to change text attributes. This command must be preceded by a **tx** command or another **at** command. A **ch** and **cs** command can be used to define the height and spacing of the characters.

COMMAND: **at** *flag,string~*

Parameter	Description
flag	0 - normal text string. 1 - append *string* text.
string	0 to 69 characters followed by a tilde (~).

Example: **at 0,SILO~**

bb (begin body)

File Delimiter

PURPOSE: The begin body command indicates that graphic commands follow. This must be present in a display or symbol source file before any graphic commands.

COMMAND: **bb**

bc (background color)

Graphic Attribute

PURPOSE: The background color command sets the color used as the background color of figures in a display. The console defaults to a black background color. Background color, if used, must come before text color (**tc**). Currently, the **bc** command can only be used to set background for text.

COMMAND: **bc** *flag,color*

Parameter	Description
flag	1 - off. 0 - on.
color	Refer to Table 3-2 for color index numbers.

Example: **bc 1,0**

bd 126 (block details display)

Block Details Display

PURPOSE: The block details display command can be used to create a block details display for a specific function block. The command contains a loop, PCU, module, and block address parameter that dedicates the display to a certain function block. A block details display provides the capability to perform process tuning.

COMMAND: **bd 126,***x-coord,y-coord,size,loop,PCU,module,block*

Parameter	Description
x-coord,y-coord	Lower left corner coordinates of the box.
size	66 - small (6,725 × 3,456). Any other number - large (9,200 × 6,800) block.
loop	0 to 250
PCU	1 to 250
module	0 to 31
block	0 to 9998

Example: **bd 126,400,400,1,1,2,3,99**

bm (begin metafile)

File Delimiter

PURPOSE: The begin metafile command must be present on the first line in a source file for a graphic display.

COMMAND: **bm 0,***metafile~*

Parameter	Description
0	Required.
metafile	Name of up to 27 characters followed by a tilde (~).

Example: **bm 0,D03SD001~**

bp (begin picture)

File Delimiter

PURPOSE: The begin picture command identifies the beginning of the escape commands that make up an element or elements of the display. Each time a **bp** command is encountered, all variables of the preceding element return to default states. Several **bp** commands can appear in a single file.

COMMAND: **bp** *flag,text~,color*

Parameter	Description
flag	0 - clear screen to *color*. 1 - do not clear screen.
text	Maximum of 28 characters followed by a tilde (~) for description purposes only.
color	Background color. Refer to Table 3-2 for color index numbers.

Example: **bp 1,dcsfull~,0**

ca (closed arc)

Graphic Primitive

PURPOSE: The closed arc command produces a pie-shaped arc defined by a starting, intermediate, and ending coordinate. The attributes of the line creating the arc can be defined by an **lc** and **lt** command. The console automatically closes the arc. To fill the arc, it must be preceded by an **is** and **fc** command and an **lc** command if perimeter is on for the **is** command.

COMMAND: **ca** *x1-coord,y1-coord;x2-coord,y2-coord;x3-coord,y3-coord;***1**

Parameter	Description
x1-coord,y1-coord	Starting point coordinate.
x2-coord,y2-coord	Intermediate point coordinate.
x3-coord,y3-coord	Ending point coordinate.
1	Required.

Example: **ca 1000,1000;2000,500;3000,1000;1**

cc (circle)

Graphic Primitive

PURPOSE: The circle command draws a circle based on a center point and radius parameter. The attributes of the line creating the circle can be defined using an **lc** and **lt** command. When the circle is to be filled, it must be preceded by an **is** and **fc** command and an **lc** command if perimeter is on for the **is** command.

COMMAND: **cc** *x-coord,y-coord;radius*

Parameter	Description
x-coord,y-coord	Center point coordinate.
radius	Number of display units from center point.

Example: **cc 1650,4450;50**

ch (character height)

Graphic Attribute

PURPOSE: The character height command defines the size of the text characters in display units (or VDC extent) that follow. Standard single height characters are 124 units while double height characters are 248 units. If specifying a character height, the command must precede a **tx** command.

COMMAND: **ch** *units*

Parameter	Description
units	Number of display units.

Example: **ch 124**

cr (clip rectangle)

File Attribute

PURPOSE: The clip rectangle command defines the opposite corners of a control window rectangle for a pop up element and the area that clears on the next call up of a pop up element. Use the command to create pop up control elements. Place the command after the **bb** and **rf** command in the symbol source file.

COMMAND: **cr** *x1-coord,y1-coord,x2-coord,y2-coord*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinate.
x2-coord,y2-coord	Upper right corner coordinate.

Example: **cr 1000,1000,3180,4280**

cs (character space)

Graphic Attribute

PURPOSE: The character space command defines the amount of space between characters as a percent of character height. Specify the character height (**ch**) ***first***. If specifying a character space, the command must precede a **tx** command.

COMMAND: **cs** *scaler*

Parameter	Description
scaler	Two-digit percentage.

Example: **cs 20** (equals 20% or 0.20)

ea 56 (alarm/quality status)

Alarm Status

PURPOSE: The alarm status command presents alarm indications and status information for a process tag. A parameter of the command references a tag for which the command presents alarm status. It also determines the type of alarm field used to present alarms.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 56,***subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, almcolor,spacing*

Parameter	Description
subtype	32 - five-character alarm status/quality/group field. 34 - single character alarm status field.

Example: **ea 56,32,1,1099,1065,124,7,0,7,1**

DISCUSSION: Table 3-7 lists the quality indicators. These quality indications appear as the third character of a five-character alarm status/quality/group field. Table 3-8 lists the two-character alarm status descriptors. These characters appear as the first two characters of a five-character alarm status/quality/group

ea 56 (alarm/quality status) *continued*

Alarm Status

field. Table 3-9 lists the descriptors that appear if the status field is of the single character type.

Table 3-8. Alarm Status Descriptors (Two Character)

Descriptor	Description	Tag Type
Blank	No alarm	All
3H	Three-high alarm	DAANALG, DANG
2H	Two-high alarm	DAANALG, DANG
H	High alarm	ANALOG, INTANG, DAANALG, DANG, STATION
L	Low alarm	ANALOG, INTANG, DAANALG, DANG, STATION
2L	Two-low alarm	DAANALG, DANG
3L	Three-low alarm	DAANALG, DANG
HD	High deviation alarm	DANG, STATION
LD	Low deviation alarm	DANG, STATION
HR	High rate of change alarm	DANG
LR	Low rate of change alarm	DANG
N	Return to normal from alarm	All
A	Digital	DIGITAL, INTDIG, DADIGTL, RCM, RMCB, DD, MSDD, DADIG, N90STA, DEVSTAT, TEXTSTR
*	Bad quality[1]	All
!!	Alarms suppressed	DANG, DADIG, TEXTSTR

NOTE:

1. The console must be set up to handle bad quality as an alarm. Refer to the discussion on alarm quality options in the ***Configuration*** instruction for further explanation.

Table 3-9. Alarm Status Descriptors (Single Character)

Descriptor	Description	Purpose
H	High analog alarm	Appears when a tag passes a three-high, two-high, or high threshold.
L	Low analog alarm	Appears when a tag passes a three-low, two-low, or low threshold.
D	Deviation analog alarm	Appears for either a high deviation or low deviation alarm.
R	Rate of change analog alarm	Appears for either a high rate of change or low rate of change alarm.

ea 56 (alarm/quality status) *continued*

Alarm Status

Table 3-9. Alarm Status Descriptors (Single Character)

Descriptor	Description	Purpose
A	Alarm	Indicates a digital, N90STA, DEVSTAT, or TEXTSTR alarm.
*	Bad quality[1]	Appears when a tag is reported as in bad quality.
!	Alarm suppression	Indicates that alarm suppression is active for a tag.

NOTE:

1. The console must be set up to handle bad quality as an alarm. Refer to the discussion on alarm quality option in the ***Configuration*** instruction for further explanation.

Table 3-7. Quality Indicators

Indicator	Description
Blank	Good
*	Bad
x	Off scan
s	Substituted
?	Suspect
i	Alarm inhibited

ea 64 (node status - type and configuration error)

Alarm Status

PURPOSE: The node status (type and configuration error) command presents a node type and an error indication if there is a conflict between reported node type and the node type configured for a tag. The command is normally used in system status displays. The default indication to identify the error condition is an asterisk (*).

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 64,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar*

Example: **ea 64,32,1,1000,1000,124,3,0,7,1,8,0**

ea 65,50 (node status - short form status error)

Alarm Status

PURPOSE: The node status (short form status error) command presents a single character indicator to identify the existence of a node off-line error, module error, communication error, or node status error. The command is normally used in system status displays. The default indications presented to identify each type of error condition are *O* for node off-line, *M* for module error, *C* for communication error, and *S* for node status problem.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 65,50,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ea 65,50,1,1900,1000,124,7,0,7,1**

ea 65,51 (node status - long form off-line error)

Alarm Status

PURPOSE: The node status (long form off-line error) command presents an indicator to identify the existence of a node off-line error. The command is normally used in system status displays. The default indications presented by this command are *offline* and *online*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 65,51,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ea 65,51,1,1000,1000,124,3,0,7,1**

ea 65,52 (node status - long form module error)

Alarm Status

PURPOSE: The node status (long form module error) command presents an indicator to identify the existence of a module error within the node. The command is normally used in system status displays. The default indications presented by this command are *error* and *ok*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 65,52,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ea 65,52,1,1000,1000,124,3,0,7,1**

ea 65,53 (node status - long form communications error)

Alarm Status

PURPOSE: The node status (long form communications error) command presents an indicator to identify the existence of a communication error. The command is normally used in system status displays. The default indications of this command are *error* and *ok*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 65,53,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ea 65,53,1,1000,1000,124,3,0,7,1**

ea 65,54 (node status - long form node status error)

Alarm Status

PURPOSE: The node status (long form node status error) command presents an indicator to identify the existence of a status problem. The command is normally used in system status displays. The default indications presented by this command are *problem* and *normal*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 65,54,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ea 65,54,1,1000,1000,124,3,0,7,1**

ea 68,32 (module status - type and configuration error)

Alarm Status

PURPOSE: The module status (type and configuration error) command presents a module type and an error indication if there is a conflict between reported module type and the module type configured for a tag. It is normally used in system status displays. The default indication presented to identify the error is an asterisk (*).

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 68,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar*

Example: **ea 68,32,1,1200,1000,124,3,0,7,1,8,0**

ea 68,71 (module status - enhanced type and configuration error)

Alarm Status

PURPOSE: The module status (enhanced type and configuration error) command works the same as **ea 68,32** except that it provides an enhanced module type description. It is normally used in system status displays. The default indication presented to identify the error is an asterisk (*).

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 68,71,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar*

Example: **ea 68,71,1,1200,1000,124,3,0,7,1,8,0**

ea 69 (module status - mode)

Alarm Status

PURPOSE: The module status (mode) command presents a module mode indication. The command is normally used in system status displays. The default mode indications presented by this command are *execut* (execute), *config* (configure), *error*, *stndby*, and *failed*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 69,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ea 69,32,1,2200,1000,124,3,0,7,1**

ea 70 (module status - error indicator)

Alarm Status

PURPOSE: The module status (error indicator) command presents a module error indicator to identify that a module has some error. This is a general indication that only identifies the existence of an error. The command is normally used in system status displays. The default indication presented by this command is *ERR*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 70,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ea 70,32,1,3000,1000,124,3,0,7,1**

ea 93 (device status)

Alarm Status

PURPOSE: The device status command presents status indications for a supported peripheral device. The command is normally used in device status displays. The default indications presented by this command depend on the device the tag is defining. If supported by this console, the command can present status indications for its interface unit, clock, keyboards, annunciator display panels, monitors, printers, touch screen, and storage devices.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ea 93,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar*

Example: **ea 93,32,1,1000,1000,124,3,0,7,1,8,0**

ea 114 (alarm state)

Alarm Status

PURPOSE:

The alarm state command enables a two-character text field to present the current alarm state of a tag. Table 3-8 shows the default text strings presented by this command. The alarm states reported by a tag depend on its type.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ea 114,32,*tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ea 114,32,23,4500,3600,124,3,0,7,1**

ec 33 (alarm comment)

Configuration Data

PURPOSE:

The alarm comment command retrieves and displays the alarm comment text string defined for a specified tag. The comment that appears depends on the subtype parameter of the command. The alarm states reported by a tag depend on its type.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ec 33,*subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, spacing,charlength,startchar*

ec 33 (alarm comment) *continued*

Configuration Data

Parameter	Description
subtype	32 - alarm comment. 35 - high alarm comment. 36 - low alarm comment. 62 - return to normal alarm comment. 63 - low deviation alarm comment. 64 - high deviation alarm comment. 65 - two-low alarm comment. 66 - two-high alarm comment. 67 - three-low alarm comment. 68 - three-high alarm comment. 69 - low rate of change alarm comment. 70 - high rate of change alarm comment. 72 - hardware failure alarm comment.

Example: **ec 33,32,6,1751,1572,124,7,0,1,22,0**
ec 33,32,6,1051,1432,124,7,0,1,22,22
ec 33,32,6,1051,1432,124,7,0,1,20,44

ec 34 (tag name)

Configuration Data

PURPOSE: The tag name command retrieves and displays the tag name text string defined in the tag database for a specified tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 34,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing,charlength,startchar*

Example: **ec 34,32,1,1439,2396,124,5,0,1,14,0**

ec 35 (tag descriptor)

Configuration Data

PURPOSE: The tag descriptor command retrieves and displays the tag descriptor text string defined in the tag database for a specified tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 35,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing, charlength,startchar*

Example: **ec 35,32,1,1342,2256,124,5,0,1,16,0**
ec 35,32,1,1342,2256,124,5,0,1,16,16

ec 36 (customer identifier)

Configuration Data

PURPOSE: The customer identifier command retrieves and displays the customer identifier text string defined in the tag database for a specified tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 36,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing, charlength,startchar*

Example: **ec 36,32,1,1342,2256,124,5,0,1,16,0**
ec 36,32,1,1342,2256,124,5,0,1,16,16

ec 37 (logic state descriptor)

Configuration Data

PURPOSE: The logic state descriptor command retrieves and displays the logic state descriptor defined for a specified tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 37,***subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Parameter	Description
subtype	33 - zero state. 34 - one state. 47 - two state (MSDD). 48 - three state (MSDD).

Example: **ec 37,33,1,1289,1397,124,5,0,1**
ec 37,34,1,1289,1567,124,5,0,1

ec 38 (engineering unit)

Configuration Data

PURPOSE: The engineering unit command retrieves and displays the engineering unit reported for a specified tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 38,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing,***0**

Example: **ec 38,32,1,2109,1512,124,5,0,1,0**

ec 39 (alarm limit - high or low)

Configuration Data

PURPOSE:

The alarm limit (high or low) command retrieves and displays either the high or low alarm limit being reported for a specified tag. The value corresponds to an exception reported high alarm or low alarm limit value.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ec 39,*subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, spacing,charlength,decdigits*

Parameter	Description
subtype	35 - high alarm limit. 36 - low alarm limit.

Example: **ec 39,35,11,2569,2002,124,5,0,1,6,2**

ec 39 (alarm limits - high and low)

Configuration Data

PURPOSE:

The alarm limits (high and low) command retrieves and displays both the high and low alarm limit being reported for a specified tag. The values correspond to the exception reported high alarm and low alarm limit values.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ec 39,*subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, spacing,charlength,decdigits,scale*

Parameter	Description
subtype	39 - vertical scale direction. 40 - horizontal scale direction.
x-coord,y-coord	Starting point. Determines the position of the low limit value. The high limit value is positioned at the *x-coord,y-coord* starting point plus the *scale*.
scale	Number of display units separating the high and low alarm limits. The starting point for the scale is *x-coord,y-coord*.

Example: **ec 39,39,1,2569,2002,124,5,0,1,6,2,1400**

ec 40 (scale limit - high or low)

Configuration Data

PURPOSE:

The scale limit (high or low) command retrieves and displays either the high or low scale limit being reported for a specified tag. The value is either the exception reported zero value or is derived from the exception reported zero and span.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ec 40,*subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, spacing,charlength,decdigits,vartype*

Parameter	Description
subtype	35 - high scale limit. 36 - low scale limit.
vartype	0 - process variable. 1 - set point.

Example: **ec 40,35,1,2569,1852,124,5,0,1,6,2,0**

ec 40 (scale limits - high and low)

Configuration Data

PURPOSE: The scale limits (high and low) command retrieves and displays both the high and low scale limit being reported for a specified tag. The values are derived from the exception reported zero and span values.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 40,***subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, spacing,charlength,decdigits,vartype,scale*

Parameter	Description
subtype	39 - vertical scale direction. 40 - horizontal scale direction.
x-coord,y-coord	Starting point. Determines the position of the low limit value. The high limit value is positioned at the *x-coord,y-coord* starting point plus the *scale*.
vartype	0 - process variable. 1 - set point.
scale	Positions the high limit value and is the number of display units separating the high and low alarm limits. The starting point for the scale is *x-coord,y-coord*.

Example: **ec 40,39,1,2569,1852,124,5,0,1,6,2,0,1700**

ec 41 (alarm ticks - high and low)

Configuration Data

PURPOSE:

The alarm ticks (high and low) command displays reference markers to identify the position of both the high and low alarm limits on a scale. The position of the marks correspond to the exception reported high and low alarm limit values.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ec 41,*subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor,scale*

Parameter	Description
subtype	39 - vertical scale direction. 40 - horizontal scale direction.
x-coord,y-coord	Starting point. Determines the position of the low limit tick mark. The high limit tick mark is positioned at the *x-coord,y-coord* starting point plus the *scale*.
scale	Positions the high limit tick mark and is the number of display units separating the high and low alarm limits. The starting point for the scale is *x-coord,y-coord*.

Example: **ec 41,39,1,1669,2002,50,5,0,1400**

ec 63 (node status - number)

Configuration Data

PURPOSE:

The node status (number) command retrieves and displays the node number address defined in the tag database for a specified tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ec 63,32,*tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ec 63,32,10,1700,6400,124,7,0,1**

ec 66,51 (node status - node text)

Configuration Data

PURPOSE: This node status (node text) command displays the static text associated with node error status. It is normally used in system status displays. The default text presented by this command is *Node*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 66,51,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ec 66,51,1,1200,6400,124,5,0,1**

ec 66,52 (node status - module text)

Configuration Data

PURPOSE: This node status (module text) command displays the static text associated with module status. It is normally used in system status displays. The default text presented by this command is *Module*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 66,52,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ec 66,52,1,2500,6400,124,5,0,1**

ec 66,53 (node status - communication system text)

Configuration Data

PURPOSE: This node status (communication system text) command displays the static text associated with communication system status. It is normally used in system status displays. The default text presented by this command is *Communication System*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 66,53,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ec 66,53,1,4000,6400,124,5,0,1**

ec 66,54 (node status - node status text)

Configuration Data

PURPOSE: This node status (node status text) command displays the static text associated with node status. It is normally used in system status displays. The default text presented by this command is *Node Status*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 66,54,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ec 66,54,1,6800,6400,124,5,0,1**

ec 67 (module address)

Configuration Data

PURPOSE: The module address command retrieves and displays the module address defined in the tag database for a specified tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 67,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ec 67,32,1,1200,1000,124,7,0,1**

ec 96 (device type)

Configuration Data

PURPOSE: The device type command retrieves and displays either the device type or device subtype defined in the tag database for a specified tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 96,***subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing,charlength,startchar*

Parameter	Description
subtype	59 - device type text. 60 - device subtype text.

Example: **ec 96,59,1,4300,2600,124,3,0,1,12,0**

ec 97 (device number)

Configuration Data

PURPOSE: Each device type or subtype has an associated device number. The device number command retrieves and displays the device number for a tag defined in the tag database.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 97,***subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Parameter	Description
subtype	32 - device number. 61 - device subnumber.

Example: **ec 97,32,1,4300,2600,124,3,0,1**

ec 104 (alarm group)

Configuration Data

PURPOSE: The alarm group command enables a two-character field that displays the alarm group number of a tag. The field presents a *0* for no group assignment, *1* to *99*, *S* for system status group, or *D* for device status group.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 104,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ec 104,32,40,1575,1600,124,3,0,1**

ec 105 (DANG reference value)

Configuration Data

PURPOSE:

The DANG reference value command presents three floating point reference values. These identify the low limit reference value, center reference value, and high limit reference value set in the PCU control module. The low reference value is placed at the x,y coordinate parameter of the command. The high reference value is positioned at the low reference value position plus the scale. The center value is placed proportionally between the high and low reference values.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ec 105,*subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, spacing,charlength,decdigits,scale*

Parameter	Description
subtype	39 - vertical. 40 - horizontal.
x-coord,y-coord	Starting point. Determines the position of the low reference value. The high reference value is positioned at the *x-coord,y-coord* starting point plus the *scale*. The center reference value is drawn proportionally between the high and low reference values.
scale	Number of display units separating the high reference value and low reference value. The starting point for the scale is *x-coord,y-coord*.

Example: **ec 105,39,55,2569,2002,124,5,0,1,6,2,1400**

ec 106 (DANG bar graph pivot point - tick mark)

Configuration Data

PURPOSE:

The DANG bar graph pivot point (tick mark) command enables a horizontal or vertical line segment (tick mark) to identify the center reference value of the reference value scale. The mark positions proportionally between the low reference value and high reference value.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ec 106,*subtype,tag,x-coord,y-coord,charsize,color,scale*

Parameter	Description
subtype	39 - vertical. 40 - horizontal.
x-coord,y-coord	Starting point. Identifies the position of the low reference value. The tick mark is drawn proportionally between the high reference value and low reference value. The position of the high reference value is the *x-coord,y-coord* starting point plus the *scale*.
color	Color to use for the tick mark. Refer to Table 3-2 for color index numbers.
scale	Number of display units separating the high reference value and low reference value. The starting point for the scale is *x-coord,y-coord*.

Example: **ec 106,39,55,2569,2002,124,3,1400**

ec 124 (text string length - console)

Configuration Data

PURPOSE: The text string length (console) command indicates the length of the text string configured in the tag database for a tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 124,32**,*tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ec 124,32,15,2200,3000,124,3,0,1**

ec 125 (text string length - function block)

Configuration Data

PURPOSE: The text string length (function block) command indicates the length of the text string configured in a PCU module function block.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 125,32**,*tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ec 125,32,15,2200,3015,124,3,0,1**

ec 132,32 (text string - I/O subtype indicator)

Configuration Data

PURPOSE: The text string (I/O subtype indicator) escape displays a text indicator to identify the analog and digital tag I/O types. The text displayed is derived from the I/O subtype configurable text set. the default text is *STD*, *ENH/IN* or *ENH/OUT*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ec 132,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ec 132,32,8,1485,1512,124,8,0,1**

ed 33 (alarm comment)

Dynamic Data

PURPOSE: The alarm comment command presents alarm comment text corresponding to alarm conditions exception reported for a specified tag. The descriptor that appears depends on both the alarm condition being reported and the alarm comment referenced during tag configuration.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 33,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing,*
charlength,startchar

Example: **ed 33,32,2,1051,1432,124,7,0,1,22,0**
ed 33,32,2,1051,1432,124,7,0,1,22,22
ed 33,32,2,1051,1432,124,7,0,1,20,44

ed 37 (logic state descriptor)

Dynamic Data

PURPOSE: The logic state descriptor command presents the logic state descriptor corresponding to the digital state exception reported for a specified tag. The descriptor that appears depends on both the state being reported and the descriptor defined for that state during tag configuration.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 37,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ed 37,32,8,1599,1512,124,3,0,7,1**

ed 42 (value)

Dynamic Data

PURPOSE: The value command presents the value or state being exception reported for a tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 42,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,decdigits,vartype*

Parameter	Description
vartype	0 - process variable or state of a digital type of tag. 1 - set point. 2 - control output. 3 - ratio index.

Example: **ed 42,32,2,1754,1832,124,3,0,7,1,6,2,0**

ed 43 (output indicator)

Dynamic Data

PURPOSE:

The output indicator command presents an indicator to identify the output being requested from a function block. The command can be defined to provide an indication for both the zero and one state requested output, zero state only, or one state only.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 43,*subtype,tag,x-coord,y-coord,size,fgcolor,bgcolor,almcolor*

Parameter	Description
subtype	32 - zero and one state. 33 - zero state only. 34 - one state only.
size	Size of the indicator expressed in display units.

Example:

ed 43,34,9,1849,1645,124,3,0,3
ed 43,33,18,1499,1645,124,3,0,3

ed 44 (RMCB feedback indicator)

Dynamic Data

PURPOSE: The RMCB feedback indicator command presents an indicator to verify the actual output of a remote motor control block function block.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 44,***subtype,tag,x-coord,y-coord,size,fgcolor,bgcolor,almcolor*

Parameter	Description
subtype	33 - show feedback zero state. 34 - show feedback one state.
size	Size of the indicator expressed in display units.

Example: **ed 44,33,6,2099,1502,124,3,0,3**

DISCUSSION: The command provides an indication based on both feedback signals. A solid left-pointing arrow denotes one state. A hollow left-pointing arrow denotes zero state. The one state indication displays only when both of the feedbacks for the tag are in their one state; otherwise, it is blank. The zero state indication displays when either of the feedbacks is zero; otherwise, it is blank. Table 3-10 shows the relationship between reported feedback state and feedback indication.

Table 3-10. RMCB Feedback Signal to Feedback Indicator Relationship

FB1 State	FB2 State	One State Indication	Zero State Indication
0	0	blank	hollow
0	1	blank	hollow
1	0	blank	hollow
1	1	filled	blank

ed 44 (RCM feedback indicator)

Dynamic Data

PURPOSE: The RCM feedback indicator command presents an indicator to verify the actual output of a remote control memory function block. The command defines an indicator for the zero and one state feedback.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 44,***subtype,tag,x-coord,y-coord,size,fgcolor,bgcolor,almcolor*

Parameter	Description
subtype	32 - show zero and one state. 33 - show zero state only. 34 - show one state only.
size	Size of the indicator expressed in display units.

Example: **ed 44,33,18,2399,1402,124,3,0,3**

ed 45 (set permissive indicator)

Dynamic Data

PURPOSE: The set permissive indicator command presents a text indicator to identify either a set permissive or non permissive condition being reported by a function block. The default text presented by this command is *SP* and *NP*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 45,***subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Parameter	Description
subtype	32 - show set permissive and non permissive. 37 - show set permissive only. 38 - show set non permissive only.

Example: **ed 45,32,18,2800,1645,124,3,0,1**

ed 46 (RCM override indicator)

Dynamic Data

PURPOSE: The RCM override indicator command presents a text indicator to identify an override condition being reported by a remote control memory function block. The default text presented by this command is *OVR*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 46,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 46,32,18,2800,1245,124,3,0,1**

ed 47 (station mode - type 1)

Dynamic Data

PURPOSE: The station mode (type 1) command presents a text indication to identify the current operating mode being reported by a station function block. The default text displayed by this command is *AUTO*, *MANUAL*, *BYPASS*, *CASC*, or *RATIO*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 47,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 47,32,15,1869,1202,124,3,0,1**

NOTE: Do not intermix type 1 station commands with type 2 or 3 commands.

ed 48 (station status - type 1)

Dynamic Data

PURPOSE:

The station status (type 1) command presents a text indication to identify the current operating status being reported by a station function block. The default text displayed by this command is *LOCAL* or *CMPTR*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 48,32,*tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 48,32,15,2569,1202,124,3,0,1**

NOTE: Do not intermix type 1 station commands with type 2 or 3 commands.

ed 49 (moving value)

Dynamic Data

PURPOSE:

The moving value command presents the real value being exception reported for a specified tag as a moving value. This command can be used to present the value referenced to a scale and to have the value move up and down the scale proportionally. Use this command with an **ec 40** command to create a scaled presentation.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 49,*subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, almcolor,spacing,charlength,decdigits,vartype,scale*

Parameter	Description
subtype	39 - vertically moving. 40 - horizontally moving.
x-coord,y-coord	Starting point. Determines the lowest possible point for the moving value. The highest point for the moving value is determined by the *x-coord,y-coord* starting point plus the *scale*.

ed 49 (moving value) *continued*

Dynamic Data

Parameter	Description
vartype	0 - process variable. 1 - set point. 2 - control output.
scale	Number of display units separating the high and low value positions. The starting point for the scale is *x-coord,y-coord*.

Example: **ed 49,40,5,1249,1402,124,3,0,3,1,4,1,2,1700**

ed 50 (dynamic bar)

Dynamic Data

PURPOSE: The dynamic bar command presents the real value being exception reported for a specified tag as an expanding and contracting bar. This command can be used to present the value referenced to a scale and to have the bar expand and contract proportionally. Use this command with an **ec 40** command to create a scaled presentation.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 50,***subtype,tag,x-coord,y-coord,width,fgcolor,bgcolor,almcolor, vartype,scale*

Parameter	Description
subtype	39 - vertical bar. 40 - horizontal bar.
x-coord,y-coord	Starting point. Determines the lowest possible point for the bar which corresponds to the lowest value returned. The highest point for the bar is determined by the *x-coord,y-coord* starting point plus the *scale*.
width	Width of the bar expressed in display units.
vartype	0 - process variable. 1 - set point. 2 - control output.
scale	Number of display units separating the high and low limits of the bar. The starting point for the scale is *x-coord,y-coord*.

Example: **ed 50,40,5,1249,1567,40,3,0,3,2,1700**

ed 51 (dynamic pointer)

Dynamic Data

PURPOSE:

The dynamic pointer command presents the real value being exception reported for a specified tag as a moving pointer. This command can be used to present the value referenced to a scale and to have the pointer move up and down a scale proportionally. Use this command with an **ec 40** command to create a scaled presentation.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 51,*subtype,tag,x-coord,y-coord,size,fgcolor,bgcolor,almcolor, vartype,scale*

Parameter	Description
subtype	41 - vertically moving left, filled pointer. 42 - vertically moving right, filled pointer. 43 - horizontally moving up, filled pointer. 44 - horizontally moving down, filled pointer. 73 - same as 41 except no fill version. 74 - same as 42 except no fill version. 75 - same as 43 except no fill version. 76 - same as 44 except no fill version.
x-coord,y-coord	Starting point. Determines the lowest possible point for the pointer which corresponds to the lowest value returned. The highest point for the pointer is determined by the *x-coord,y-coord* starting point plus the *scale*.
size	Size of the pointer expressed in display units.
vartype	0 - process variable. 1 - set point. 2 - control output.
scale	Number of display units separating the high and low positions of the pointer. The starting point for the scale is *x-coord,y-coord*.

Example: **ed 51,41,5,1874,2002,100,3,0,3,1,1400**

ed 54,45 (analog dynamic symbol)

Dynamic Symbol

PURPOSE:

The analog dynamic symbol command creates a dynamic display element that changes according to the value being reported by an analog value reporting function block. The element can show whether the value returned by the function block is currently within a low, mid, or high range.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 54,45,*tag,flashopt,vartype,lorange,midrange*

Parameter	Description
flashopt	0 - no flash. 1 - flash if in alarm and unacknowledged.
vartype	0 - process variable. 1 - set point. 2 - control output.
lorange	Maximum value for a low range indication. Crossover point between low and mid range.
midrange	Maximum value for a mid range indication. Crossover point between mid and high range.

DISCUSSION:

This command requires an **sn** command defined to indicate each range (i.e., low, mid, and high) that a value may fall within and an **sn** command for a bad quality condition returned by the function block. The symbols required include:

Low range, no alarm.
Low range, alarm.
Mid range, no alarm.
Mid range, alarm.
High range, no alarm.
High range, alarm.
Bad quality.

Example:

```
ed 54,45,17,1,0,25.0,50.0
rm -- Low range
sn LOWNA~,6000,5600,124,1,1
sn LOWALM~,6000,5600,124,1,2
rm -- Mid range
sn MIDNA~,6000,5600,124,1,3
sn MIDALM~,6000,5600,124,1,5
```

ed 54,45 (analog dynamic symbol) *continued*

Dynamic Symbol

rm -- High range
sn HIGHNA~,6000,5600,124,1,6
sn HIGHALM~,6000,5600,124,1,9
rm -- Bad quality
sn BADQUAL~,6000,5600,124,1,7

ed 54,46 (digital dynamic symbol)

Dynamic Symbol

PURPOSE: The digital dynamic symbol command creates a dynamic display element that changes according to the current output state of a function block that reports a zero and one state change.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 54,46,***tag,flashopt*

Parameter	Description
flashopt	0 - no flash. 1 - flash if in alarm and unacknowledged.

DISCUSSION: This command requires an **sn** command defined for each of the possible states that can be returned by the function block (i.e., zero and one state) and an **sn** command for a bad quality condition returned by the function block. The symbols required include:

Zero state, no alarm.
Zero state, alarm.
One state, no alarm.
One state, alarm.
Bad quality.

Example:

ed 54,46,20,1
rm -- Zero state
sn ZERONA~,6000,5600,124,1,1
sn ZEROALM~,6000,5600,124,1,2

ed 54,46 (digital dynamic symbol) *continued*

Dynamic Symbol

```
rm -- One state
sn ONENA~,6000,5600,124,1,3
sn ONEALM~,6000,5600,124,1,5
rm -- Bad quality
sn BADQUAL~,6000,5600,124,1,7
```

ed 54,47 (advanced digital dynamic symbol)

Dynamic Symbol

PURPOSE: The advanced digital dynamic symbol command creates a dynamic display element that changes according to the current output state of a function block that reports a zero and one state change.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 54,47,***tag,flashopt*

Parameter	Description
flashopt	0 - no flash. 1 - flash if in alarm and unacknowledged.

DISCUSSION: This command requires an **rs** command defined for each of the possible states that can be returned by the function block (i.e., zero and one state) and an **rs** command for each quality and the alarm condition returned by the function block. Any quality symbol codes must appear after the state symbol codes.

Example:

```
ed 54,47,20,1
rm -- Zero state
rs 50.0,ZERONA~,6000,5600,124,1,1
rs 54.0,ZEROALM~,6000,5600,124,1,2
rm -- One state
rs 51.0,ONENA~,6000,5600,124,1,3
rs 55.0,ONEALM~,6000,5600,124,1,5
```

ed 54,47 (advanced digital dynamic symbol) *continued*

Dynamic Symbol

```
rm -- Qualities
rs 41.0,SUBSTIT~,6000,5600,1,8,0
rs 42.0,INHIBIT~,6000,5600,1,8,0
rs 43.0,DISESTAB~,6000,5600,1,8,0
rs 44.0,BADQUAL~,6000,5600,1,8,0
rs 45.0,SUSPECT~,6000,5600,1,8,0
rm -- Alarm Conditions
rs 46.0,HWFAIL~,6000,5600,1,7,0
rm
```

ed 54,49 (advanced analog dynamic symbol)

Dynamic Symbol

PURPOSE:

The advanced analog dynamic symbol command creates a dynamic display element that changes according to value, alarm, or quality conditions. The element can show if the value returned by an analog value reporting function block is currently within a certain range or is in a certain alarm condition or quality state.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 54,49,*tag,flashopt,vartype,almopt,numranges*

Parameter	Description
flashopt	0 - no flash. 1 - flash if in alarm and unacknowledged.
vartype	0 - process variable. 1 - set point. 2 - control output.
almopt	1 - both ranges and alarm/quality. 2 - alarm/quality only. 3 - ranges only.
numranges	Number of ranges from 1 to 25 to be specified.

ed 54,49 (advanced analog dynamic symbol) *continued*

Dynamic Symbol

DISCUSSION:

This command requires an **rs** command defined for each desired range indication (maximum of 25) and each alarm condition or quality state that may be reported. The command can be defined for range only, alarm only, or both range and alarm. A quality indication can also be incorporated. Alarm indications and **rs** command requirements depend on the analog function block being referenced.

Any quality symbol codes must appear after the range and alarm condition symbol codes. Not all alarms and qualities have to be specified. Any combination is accepted if option one or two is used.

Example:

```
ed 54,49,13,0,0,1,4
rm -- Ranges
rs 20.0,pump20~,6000,5600,1,1,0
rs 40.0,pump40~,6000,5600,1,2,0
rs 60.0,pump60~,6000,5600,1,3,0
rs 80.0,pump80~,6000,5600,1,5,0
rm -- Alarm conditions
rs 30.0,NOALM~,6000,5600,1,7,0
rs 31.0,LOWALM~,6000,5600,1,7,0
rs 32.0,HIGHALM~,6000,5600,1,7,0
rs 33.0,LOW2ALM~,6000,5600,1,7,0
rs 34.0,HIGH2ALM~,6000,5600,1,7,0
rs 35.0,LOW3ALM~,6000,5600,1,7,0
rs 36.0,HIGH3ALM~,6000,5600,1,7,0
rs 37.0,LOWDEV~,6000,5600,1,7,0
rs 38.0,HIGHDEV~,6000,5600,1,7,0
rm -- Qualities
rs 41.0,SUBSTIT~,6000,5600,1,8,0
rs 42.0,INHIBIT~,6000,5600,1,8,0
rs 43.0,DISESTAB~,6000,5600,1,8,0
rs 44.0,BADQUAL~,6000,5600,1,8,0
rs 45.0,SUSPECT~,6000,5600,1,8,0
rm -- Alarm Conditions
rs 46.0,HWFAIL~,6000,5600,1,7,0
rm
```

ed 54,56 (MSDD dynamic symbol - current state)

Dynamic Symbol

PURPOSE:

The MSDD dynamic symbol (current state) command creates a dynamic display element that changes according to the current output state being reported by a multi-state device driver function block.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 54,56,*tag,flashopt*

Parameter	Description
flashopt	0 - no flash. 1 - flash if in alarm and unacknowledged.

DISCUSSION:

This command requires an **rs** command defined for each of the possible states that can be returned by the function block (i.e., zero, one, two, and three state), and an **rs** command can be defined for each quality returned if desired. The state symbols required include:

Zero state, no alarm.
One state, no alarm.
Two state, no alarm.
Three state, no alarm.
Zero state, alarm.
One state, alarm.
Two state, alarm.
Three state, alarm.

Any quality symbol codes must appear after the state symbol codes. Not all qualities must be defined. Normally, a quality symbol overrides a state symbol. An exception to this is if a quality symbol is either not defined or is missing a symbol name or color parameter for the reported quality. In this case, the last good state symbol displays.

Example:

```
ed 54,56,157,1
rm -- States 0 thru 3-no alarm
rs 53.0,MSDLGS3~,6000,4000,1,1,0
rs 52.0,MSDLGS2~,6000,4000,1,1,0
rs 51.0,MSDLGS1~,6000,4000,1,1,0
rs 50.0,MSDLGS0~,6000,4000,1,1,0

rm -- States 0 thru 3-alarm
```

ed 54,56 (MSDD dynamic symbol - current state) *continued*

Dynamic Symbol

```
rs 57.0,MSDLGS3~,6000,4000,1,3,0
rs 56.0,MSDLGS2~,6000,4000,1,3,0
rs 55.0,MSDLGS1~,6000,4000,1,3,0
rs 54.0,MSDLGS0~,6000,4000,1,3,0
rm -- Qualities
rs 45.0,ADVSYM45~,6000,5000,1,7,0
rs 44.0,ADVSYM44~,6000,5000,1,7,0
rs 43.0,ADVSYM43~,6000,5000,1,7,0
rs 42.0,ADVSYM42~,6000,5000,1,7,0
rs 41.0,ADVSYM41~,6000,6000,1,7,0
rm
```

ed 54,57 (MSDD dynamic symbol - requested state)

Dynamic Symbol

PURPOSE: The MSDD dynamic symbol (requested state) command creates a dynamic display element that changes according to the requested output state for a multi-state device driver function block.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 54,57,***tag,flashopt*

Parameter	Description
flashopt	0 - no flash. 1 - flash if in alarm and unacknowledged.

DISCUSSION: This command requires an **rs** command defined for each of the possible states that can be requested for the function block (i.e., zero, one, two, and three state), and an **rs** command can be defined for each quality returned if desired. The state symbols required include:

Zero state, no alarm.
One state, no alarm.
Two state, no alarm.
Three state, no alarm.
Zero state, alarm.
One state, alarm.

ed 54,57 (MSDD dynamic symbol - requested state) *continued*

Dynamic Symbol

Two state, alarm.
Three state, alarm.

Any quality symbol codes must appear after the state symbol codes. Not all qualities must be defined. Normally, a quality symbol overrides a state symbol. An exception to this is if a quality symbol is either not defined or is missing a symbol name or color parameter for the reported quality. In this case, the last good state symbol displays.

Example:

```
ed 54,57,157,1
rm -- States 0 thru 3-no alarm
rs 53.0,MSDRQS3~,6000,4000,1,1,0
rs 52.0,MSDRQS2~,6000,4000,1,1,0
rs 51.0,MSDRQS1~,6000,4000,1,1,0
rs 50.0,MSDRQS0~,6000,4000,1,1,0
rm -- States 0 thru 3-alarm
rs 57.0,MSDRQS3~,6000,4000,1,3,0
rs 56.0,MSDRQS2~,6000,4000,1,3,0
rs 55.0,MSDRQS1~,6000,4000,1,3,0
rs 54.0,MSDRQS0~,6000,4000,1,3,0
rm -- Qualities
rs 45.0,ADVSYM45~,6000,5000,1,7,0
rs 44.0,ADVSYM44~,6000,5000,1,7,0
rs 43.0,ADVSYM43~,6000,5000,1,7,0
rs 42.0,ADVSYM42~,6000,5000,1,7,0
rs 41.0,ADVSYM41~,6000,6000,1,7,0
rm
```

ed 54,58 (exception report discrete dynamic symbol)

Dynamic Symbol

PURPOSE:

The exception report discrete dynamic symbol command creates a dynamic display element that changes according to certain status indications returned for a tag. Refer to Table 3-11 for the types of status indications that can be represented by this dynamic element.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 54,58,*tag,flashopt,dataopt*

Parameter	Description
flashopt	0 - no flash. 1 - flash if in alarm and unacknowledged.
dataopt	Refer to Table 3-11 for valid option codes and the data type represented by the code

Table 3-11. Exception Report Text - Option Codes

Option Code	States Returned	Data Type	Tag Type
3	2	Calibration quality	ANALOG
4	2	Point disabled	ANALOG
6	2	State	DD, DIGITAL, MSDD, RCM, RMCB
8	2	Red tag status	DANG, DADIG, DD, MSDD, RCM, RMCB, STATION, TEXTSTR
9	2	Set point tracking	STATION
10	2	Bypass mode	STATION
11	2	Mode interlock	STATION, TEXTSTR
12	2	Output tracking	STATION
13	2	Analog output status	STATION
14	2	Computer status	STATION
15	2	Station level	STATION
16	2	Cascade, ratio, or normal	STATION
17	2	Auto/manual	STATION, TEXTSTR
18	2	Logic set	RCM
19	2	Set permissive	RCM
20	2	Logic reset	RCM

ed 54,58 (exception report discrete dynamic symbol) *continued*

Dynamic Symbol

Table 3-11. Exception Report Text - Option Codes

Option Code	States Returned	Data Type	Tag Type
21	2	Override	RCM
22	2	Feedback	RCM
23	2	Set command	RCM
24	2	Reset command	RCM
25	2	Feedback status	DD, MSDD
26	2	Status override	DD, MSDD
27	4	Mode	DD
28	4	Requested state	MSDD
29	2	Last good state	MSDD
30	2	Feedback one state	DD, MSDD, RMCB
31	2	Feedback two state	DD, MSDD, RMCB
32	2	Feedback three state	MSDD
33	2	Feedback four state	MSDD
35	2	Control override	MSDD
36	2	Mode	MSDD
37	2	Bad start	RMCB
38	2	Fault	RMCB
39	2	Start permissive one	RMCB
40	2	Start permissive two	RMCB
41	16	Error code	RMCB
42	2	Tracking	RMSC
43	2	PV status	STATION
51	2	Backup status	N90STA
52	2	Local I/O error	N90STA
53	2	Remote I/O error	N90STA
54	3	Input source	DANG, DADIG
55	2	No report	DANG, DADIG
56	2	Hardware failure	DANG
57	2	Constraint enabled	DANG
58	2	Permit input select	DANG, DADIG
59	2	Variable alarms	DANG
60	2	Re-alarm	DANG, DADIG, TEXTSTR
61	2	Quality override	DANG, DADIG, TEXTSTR
62	2	Constrained	DANG
63	2	Multilevel alarming	DANG
64	2	Value latched	DADIG
65	2	Echo	TEXTSTR

ed 54,58 (exception report discrete dynamic symbol) *continued*

Dynamic Symbol

Table 3-11. Exception Report Text - Option Codes

Option Code	States Returned	Data Type	Tag Type
66	2	String interlock	TEXTSTR
67	2	Truncation	TEXTSTR
71	2	Status error inhibited mode	ANALOG, DIGITAL
72	2	Simulation module	ANALOG, DIGITAL
73	2	Override enable	ANALOG, DIGITAL
74	2	Propagated quality	ANALOG, DIGITAL
75	2	Configuration error	ANALOG, DIGITAL
76	4	Range	ANALOG, DIGITAL
77	2	Readback status	ANALOG, DIGITAL
78	2	Reference status	ANALOG
79	2	Override permit	ANALOG, DIGITAL

DISCUSSION: This command requires an **sn** command defined for each of the possible states that can be returned by the function block. It also requires an **sn** command for both alarm and no alarm conditions for the state (i.e., each state requires two symbols) and an **sn** command for a bad quality condition returned by the function block. Table 3-11 shows the number of states returned for each selected option code.

Station mode example:

ed 54,58,16,1,17
rm -- Zero state
sn MANUALNA~,6000,5600,124,1,1
sn MANULALM~,6000,5600,124,1,2
rm -- One state
sn AUTONA~,6000,5600,124,1,3
sn AUTOALM~,6000,5600,124,1,5
rm -- Bad quality
sn BADQUAL~,6000,5600,124,1,7

Red tag status example:

ed 54,58,16,1,8
rm -- Not red tagged
sn NOTRTNA~,6000,5600,124,1,1
sn NOTRTALM~,6000,5600,124,1,2
rm -- Red tagged
sn REDTGNA~,6000,5600,124,1,3
sn REDTGALM~,6000,5600,124,1,5
rm -- Bad quality
sn BADQUAL~,6000,5600,124,1,7

ed 57 (tracking indicator)

Dynamic Data

PURPOSE: The tracking indicator command presents a text indication to identify that a remote manual set constant function block has been set to tracking mode. The default text displayed by this command is *T*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 57,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 57,32,10,1099,1647,124,3,0,1**

ed 58 (DD or MSDD override)

Dynamic Data

PURPOSE: The DD or MSDD override indicator command presents a text indicator to identify an override condition being reported by a device driver (DD) function block or a multi-state device driver (MSDD) function block. The default text presented by this command is *OVR*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 58,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 58,32,9,2799,1245,124,3,0,1**

ed 59 (feedback indicator)

Dynamic Data

PURPOSE: The feedback indicator command presents a logic state descriptor indication to verify the actual output of a function block. Either the zero state or one state descriptor defined in the tag database appears depending on the feedback state returned. The command can be defined to provide an indication for either the feedback one, feedback two, feedback three, or feedback four reported states.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 59,***subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, almcolor,spacing*

Parameter	Description
subtype	33 - feedback one. 34 - feedback two. 47 - feedback three (MSDD). 48 - feedback four (MSDD).

Example: **ed 59,33,9,2279,1402,124,3,0,3,1**
ed 59,48,8,2279,1397,124,3,0,7,1

ed 60 (DD or MSDD mode)

Dynamic Data

PURPOSE: The DD or MSDD mode command presents a text indication to identify the current operating mode being reported by a function block. The default text displayed by this command for a DD tag is *MANUAL*, *AUTO*, or *REMOTE*. The default text displayed by this command for an MSDD tag is *MANUAL* or *AUTO*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 60,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 60,32,9,1199,1245,124,3,0,3**

ed 61 (MSDD output indicator)

Dynamic Data

PURPOSE: The MSDD output indicator command presents an indicator to identify the output being requested from a multi-state device driver function block. The command can be defined to provide an indication for the default, one, two, or three requested outputs.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 61,***subtype,tag,x-coord,y-coord,size,fgcolor,bgcolor,almcolor*

Parameter	Description
subtype	33 - default output. 34 - output one indicator. 47 - output two indicator. 48 - output three indicator.
size	Size of the indicator expressed in display units.

Example: **ed 61,34,8,1289,1567,124,3,0,7**

ed 62 (MSDD control override)

Dynamic Data

PURPOSE: The MSDD control override command presents a text indicator to identify a control override condition being reported by a multi-state device driver function block.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 62,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 62,32,8,2799,1227,124,3,0,1**

ed 64 (node status - type and configuration error)

Dynamic Data

PURPOSE: The node status (type and configuration error) command presents a node type and an error indication if there is a conflict between reported node type and the node type configured for a tag. The command is normally used in system status displays. The default indication to identify the error condition is an asterisk (*).

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 64,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar*

Example: **ed 64,32,1,1000,1000,124,3,0,7,1,8,0**

ed 65,50 (node status - short form error)

Dynamic Data

PURPOSE: The node status (short form error) command presents a single character indicator to identify the existence of a node off-line, module error, communication error, or node status error. The command is normally used in system status displays. The default indications presented to identify each type of error condition are *O* for node off-line, *M* for module error, *C* for communication error, and *S* for node status problem.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 65,50,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ed 65,50,1,1900,1000,124,7,0,7,1**

ed 65,51 (node status - long form off-line error)

Dynamic Data

PURPOSE: The node status (long form off-line error) command presents an indicator to identify the existence of a node off-line error. The command is normally used in system status displays. The default indications presented by this command are *offline* and *online*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 65,51,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ed 65,51,1,1000,1000,124,3,0,7,1**

ed 65,52 (node status - long form module error)

Dynamic Data

PURPOSE: The node status (long form module error) command presents an indicator to identify the existence of a module error within the node. The command is normally used in system status displays. The default indications presented by this command are *error* and *ok*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 65,52,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ed 65,52,1,1000,1000,124,3,0,7,1**

ed 65,53 (node status - long form communications error)

Dynamic Data

PURPOSE: The node status (long form communications error) command presents an indicator to identify the existence of a communication error. The command is normally used in system status displays. The default indications presented by this command are *error* and *ok*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 65,53,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ed 65,53,1,1000,1000,124,3,0,7,1**

ed 65,54 (node status - long form node status error)

Dynamic Data

PURPOSE: The node status (long form node status error) command presents an indicator to identify the existence of a status problem. The command is normally used in system status displays. The default indications presented by this command are *problem* and *normal*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 65,54,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ed 65,54,1,1000,1000,124,3,0,7,1**

ed 68,32 (module status - type and configuration error)

Dynamic Data

PURPOSE: The module status (type and configuration error) command presents a module type and an error indication if there is a conflict between reported module type and the module type configured for a tag. It is normally used in system status displays. The default indication presented to identify the error is an asterisk (*).

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 68,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar*

Example: **ed 68,32,1,1200,1000,124,3,0,7,1,8,0**

ed 68,71 (module status - enhanced type and configuration error)

Dynamic Data

PURPOSE: The module status (enhanced type and configuration error) command works the same as **ed 68,32** except that it provides an enhanced module type description. It is normally used in system status displays. The default indication presented to identify the error is an asterisk (*).

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 68,71,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar*

Example: **ed 68,71,1,1200,1000,124,3,0,7,1,8,0**

ed 69 (module status - mode)

Dynamic Data

PURPOSE: The module status (mode) command presents a module mode indication. The command is normally used in system status displays. The default mode indications presented by this command are *execut* (execute), *config* (configure), *error*, *stndby*, and *failed*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 69,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ed 69,32,1,2200,1000,124,3,0,7,1**

ed 70 (module status - error indicator)

Dynamic Data

PURPOSE: The module status (error indicator) command presents a module error indicator to identify that a module has some error. This is a general indication that only identifies the existence of an error. The command is normally used in system status displays. The default indication presented by this command is *ERR*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 70,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ed 70,32,1,3000,1000,124,3,0,7,1**

ed 71 (module status - status bytes)

Dynamic Data

PURPOSE: The module status (status bytes) command presents the status bytes returned by a module. The command is normally used in system status displays.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 71,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 71,32,200,6600,7000,124,3,0,1**

ed 74 (station mode - type 2)

Dynamic Data

PURPOSE: The station mode (type 2) command presents a text indication to identify the current operating mode being reported by a station function block. The default text displayed by this command is *BYPASS*, *MANUAL*, *MANUAL/C*, *MANUAL/R*, *AUTO*, *AUTO/C*, or *AUTO/R*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 74,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

NOTE: Do not intermix type 2 station commands with type 1 commands.

Example: **ed 74,32,25,1869,1202,124,3,0,1**

ed 75 (station status - type 2)

Dynamic Data

PURPOSE: The station status (type 2) command presents a text indication to identify the current operating status being reported by a station function block. The default text displayed by this command is *LOCAL*, *CMPTR*, *CASC*, or *RATIO*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 75,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

NOTE: Do not intermix type 2 station commands with type 1 commands.

Example: **ed 75,32,25,2569,1202,124,3,0,1**

ed 76 (station tracking - type 2)

Dynamic Data

PURPOSE: The station tracking (type 2) command presents a text indication to identify the implementation of control output or set point tracking in a station function block. The command also presents an indication of a manual interlock set condition. The default text displayed by this command is *COTR*, *SPTR*, or *LOCK*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 76,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

NOTE: The order of precedence should an overlap occur is *COTR* overrides *LOCK* (manual interlock) and *LOCK* overrides *SPTR*.

Example: **ed 76,32,25,1249,1202,124,3,0,1**

ed 77 (station mode - type 3)

Dynamic Data

PURPOSE:

The station mode (type 3) command presents a text indication to identify the current operating mode being reported by a station function block. This is similar to type 2 except that instead of using the fixed text strings, it references text strings defined in a ***STNSTTXT.TX*** user file.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 77,32,*tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar*

NOTE: Do not intermix type 3 station commands with type 1 commands.

Example: **ed 77,32,25,1869,1202,124,3,0,7,1,10,0**

ed 79 (text selector)

Dynamic Data

PURPOSE:

The text selector command presents the text string referenced by a text selector function block. The actual message that displays depends on tag text selector configuration. Refer to the discussion on tag text selector in the ***Configuration*** instruction for specifics (Table 1-2 lists instruction numbers).

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 79,32,*tag,x-coord,y-coord,charsize,spacing,charlength,startchar*

Example: **ed 79,32,17,2800,1245,124,1,20,0**
ed 79,32,17,2800,1245,124,1,20,20

ed 80,33 (RMCB bad start text)

Dynamic Data

PURPOSE: The RMCB bad start text command presents a text indication to identify a bad start being reported by a remote motor control function block. The default text displayed by this command is *BAD START*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 80,33,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ed 80,33,6,1200,1340,124,3,0,3,1**

ed 80,34 (RMCB fault indicator text)

Dynamic Data

PURPOSE: The RMCB fault indicator text command presents a text indication to identify a fault condition being reported by a remote motor control function block. The default text displayed by this command is *FAULT*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 80,34,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ed 80,34,6,2200,1340,124,3,0,3,1**

ed 81 (RMCB permissive indicator)

Dynamic Data

PURPOSE:

The RMCB permissive indicator command presents a logic state descriptor to identify the current permissive inputs to a remote motor control function block. Either the zero state or one state descriptor defined in the tag database appears depending on the permissive state returned. The command can be defined to provide an indication for either the permissive one or permissive two reported states.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 81,*subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, almcolor,spacing*

Parameter	Description
subtype	33 - permissive one. 34 - permissive two.

Example: **ed 81,33,6,2280,1820,124,3,0,7,1**

ed 92 (RMCB error code text)

Dynamic Data

PURPOSE: The RMCB error code text command presents a text string to identify an error code reported by a remote motor control function block. The block can return one of a maximum 16 different codes. The actual error code message that displays depends on remote motor control text configuration. Refer to the discussion on remote motor control text in the ***Configuration*** instruction for specifics (Table 1-2 lists instruction numbers).

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 92,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,start-char*

Example: **ed 92,32,6,1200,1180,124,3,0,3,1,20,0**

ed 94 (device status - status bytes)

Dynamic Data

PURPOSE: The device status (status bytes) command presents an error code when the interface unit is marked off-line or a storage device controller senses status bytes for the last I/O. The error codes are shown as decimal integers, sense bytes as hexadecimal preceded by a pound sign (#). The command is normally used in device status displays.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 94,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 94,32,55,4300,2150,124,3,0,1**

ed 95 (device status - description)

Dynamic Data

PURPOSE: The device status (description) command presents a text string associated with an error code or storage device sense bytes. The command is normally used in device status displays.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 95,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar*

Example: **ed 95,32,55,4300,2350,124,3,0,7,1,40,0**

ed 98 (deviation bar - type 1)

Dynamic Data

PURPOSE: The deviation bar (type 1) command presents a deviation value being exception reported for a specified tag as an expanding and contracting bar. The bar expands from a baseline or null-point to show either a positive or negative deviation value.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 98,***subtype,tag,x-coord,y-coord,width,fgcolor,bgcolor,almcolor, vartype,scale,baseval,maxdev,typeopt*

Parameter	Description
subtype	39 - vertical bar. 40 - horizontal bar.
x-coord,y-coord	Starting point for the bar. The bar expands from this baseline position. The baseline is an imaginary line at the specified y-coordinate parameter for a vertical bar or at the x-coordinate for a horizontal bar. For a vertical bar, the left edge of the bar is defined by the x-coordinate. For a horizontal bar, the lower edge of the bar is defined by the y-coordinate.
width	Width of the bar expressed in display units.

ed 98 (deviation bar - type 1) *continued*

Dynamic Data

Parameter	Description
vartype	0 - process variable. 1 - set point. 2 - control output.
scale	Number of display units representing either full negative deviation or full positive deviation. The entire screen space used by a bar is 2 × *scale*. This is in contrast to normal dynamic bars where scale is the number of display units necessary to represent the entire span of the bar.
baseval	Real number that represents the baseline or null-point of the bar. When the value reported is equal to the base-value, there is no deviation; deviation is zero.
maxdev	Unsigned real value that defines the plus or minus (±) deviation to present. It is expressed in engineering units. The value should be equal to either the full-positive deviation or full-negative deviation value. For example, if the given screen space represents deviations from -3.0 to +3.0, the deviation should be specified as 3.0.
typeopt	Bar movement direction: Up or down for vertical and left or right for horizontal. 0 - positive deviation drawn upward (vertical subtype 39). 1 - positive deviation drawn downward (vertical subtype 39). 0 - positive deviation drawn right (horizontal subtype 40). 1 - positive deviation drawn left (horizontal subtype 40).

Example: **ed 98,39,1,5200,2200,500,3,0,7,0,1000,0.0000,100.0000,0**

ed 99 (deviation bar - type 2)

Dynamic Data

PURPOSE:

The deviation bar (type 2) command presents a deviation value being exception reported for a specified tag as an expanding and contracting bar. The bar expands from a baseline or null-point to show either a positive or negative deviation value. Screen space for a type 2 deviation bar is always symmetrical about the baseline. Baseline is the current set point.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 99,*subtype,tag,x-coord,y-coord,width,fgcolor,bgcolor,almcolor,* **0**,*scale,maxdev,typeopt*

Parameter	Description
subtype	39 - vertical bar. 40 - horizontal bar.
x-coord,y-coord	Starting point for the bar. The bar expands from this baseline position. The baseline is an imaginary line at the specified y-coordinate parameter for a vertical bar or at the x-coordinate for a horizontal bar. For a vertical bar, the left edge of the bar is defined by the x-coordinate. For a horizontal bar, the lower edge of the bar is defined by the y-coordinate.
width	Width of the bar expressed in display units.
0	Required.
scale	Number of screen units representing either full-negative deviation or full-positive deviation. The entire screen space used by a bar is 2 × *scale* units. This is in contrast to normal dynamic bars where scale is the number of display units necessary to represent the entire span of the bar.
maxdev	Unsigned real value that defines the plus or minus (±) deviation to present. It is expressed in engineering units. The value should be equal to either the full-positive deviation or full-negative deviation value. For example, if the given screen space represents deviations from -3.0 to +3.0, the deviation should be specified as 3.0.

ed 99 (deviation bar - type 2) *continued*

Dynamic Data

Parameter	Description
typeopt	Direction of bar movement: Up or down for vertical and left or right for horizontal. 0 - positive deviation drawn upward (vertical subtype 39). 1 - positive deviation drawn downward (vertical subtype 39). 0 - positive deviation drawn right (horizontal subtype 40). 1 - positive deviation drawn left (horizontal subtype 40).

Example: **ed 99,39,1,4000,2200,500,3,0,7,0,1000,100.0000,0**

ed 100 (red tag status - text)

Dynamic Data

PURPOSE: The red tag status text command presents a two-character text indicator to identify the current red tag condition of a process device. The default text displayed by this command is *RT*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMANDS: **ed 100,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,rtcolor, spacing,charlength,startchar*

Parameter	Description
rtcolor	Color to use as the red tag color. Refer to Table 3-2 for color index numbers.

Example: **ed 100,32,3,1020,3680,124,3,0,2,1,2,0**

ed 101 (module status - enhanced status)

Dynamic Data

PURPOSE:

The module status (enhanced status) command presents the status bytes returned by a module. The command is normally used in system status displays. It also gives the ability to present a backup module (*BKPBAD*), local I/O (*LIO*), or remote I/O (*RIO*) error status indicator.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 101,32,*tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,indopt*

Parameter	Description
indopt	51 - backup module status indicator. 52 - local I/O error indicator. 53 - remote I/O error indicator.

Example: **ed 101,32,200,6600,7000,124,3,0,7,1,51**

ed 102 (red tag status - outline)

Dynamic Data

PURPOSE:

The red tag status (outline) command causes the outline of a symbol to change to a specified red tag color when a process device is in a red tag condition. A lower left and upper right parameter in the command specifies the size of the outline. The size should match the outline of the symbol, which is normally defined by a **pl** command.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 102,32,*tag,x1-coord,y1-coord,x2-coord,y2-coord,rtcolor, nrmcolor*

Parameter	Description
x1-coord,y1-coord	Lower left corner x,y coordinates.
x2-coord,y2-coord	Upper right corner x,y coordinates.
rtcolor	Color to use as the red tag color. Refer to Table 3-2 for color index numbers.
nrmcolor	Color to use as the normal or non red tag color. Refer to Table 3-2 for color index numbers.

Example: **ed 102,32,3,0000,0000,2180,1580,2,4**

ed 103 (exception report text)

Dynamic Data

PURPOSE:

The exception report text command presents a text string associated with certain status indications returned in an exception report for a tag. The actual text that appears depends on both the data option code defined in the command and the state being reported for that data type. Table 3-11 lists the data type indications that can be presented by this command.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 103,32,*tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar,dataopt*

Parameter	Description
dataopt	Refer to Table 3-11 for valid option codes and a description of the text presented by the code.

Example: **ed 103,32,45,2279,1907,124,3,0,7,1,15,0,3**

ed 107 (DANG constrained value indicator)

Dynamic Data

PURPOSE:

The DANG constrained value indicator command enables two triangular pointers to proportionally show the high constraint limit and low constraint limit set in the PCU control module. The pointers can point up, down, left, or right. The pointers proportionally mark the position of the constrained limit values, but do not appear if the constraints have not been enabled. Each pointer positions within the range between the low display reference value and the high display reference value. The pointers remain hollow when the constrained value point has not been reached and fill when reached.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 107,*subtype,tag,x-coord,y-coord,size,fgcolor,bgcolor,scale*

Parameter	Description
subtype	41 - vertical left pointer. 42 - vertical right pointer. 43 - horizontal up pointer. 44 - horizontal down pointer.
x-coord,y-coord	Starting point. Identifies the position of the low reference value. The constrained value pointers are drawn proportionally between the high reference value and low reference value. The position of the high reference value is the *x-coord,y-coord* starting point plus the *scale*.
size	Size of the pointer expressed in display units.
scale	Number of display units separating the high reference value and low reference value. The starting point for the scale is *x-coord,y-coord*.

Example: **ed 107,42,55,1669,2002,124,5,0,1400**

ed 108 (DANG bidirectional dynamic bar)

Dynamic Data

PURPOSE:

The DANG bidirectional dynamic bar command enables a moving, dynamic bar that represents the current value being reported for a tag. The bar proportionally expands from or contracts to the center reference point depending on the reported value.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 108,*subtype,tag,x-coord,y-coord,width,fgcolor,bgcolor,almcolor, scale*

Parameter	Description
subtype	39 - vertical bar. 40 - horizontal bar.
x-coord,y-coord	Starting point. Identifies the position of the low reference value. The bar expands from the center reference point and is drawn proportionally between the high reference value and low reference value. The position of the high reference value is the *x-coord,y-coord* starting point plus the *scale*.
width	Width of the bar expressed in display units.
scale	Number of display units separating the high reference value and low reference value. The starting point for the scale is *x-coord,y-coord*.

Example: **ed 108,39,55,1669,2002,50,3,0,7,1400**

ed 109 (value source and lock indicator)

Dynamic Data

PURPOSE: The value source and lock indicator command presents a text field that displays the current source for a value or state and an indicator if that source is locked (select not enabled). The default text presented by this command is:

Source Locked	***Source Unlocked***
NORM (L)	*NORM*
U/IN (L)	*U/IN*
ALT (L)	*ALT*

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 109,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 109,32,55,5400,6200,124,3,0,1**

ed 110 (DANG variable alarm type indicator)

Dynamic Data

PURPOSE: The DANG variable alarm type indicator command presents a variable length text field to indicate whether variable alarming is enabled in the PCU control module. The default text string presented by this command is *VARIABLE* if alarming is enabled. The field remains blank if not enabled.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 110,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing, charlength,startchar*

Example: **ed 110,32,55,2300,2400,124,5,0,1,8,0**

ed 111 (no report indicator)

Dynamic Data

PURPOSE: The no report indicator command enables a variable length text field to indicate that the tag is in a no report mode. The default text string presented by this command is *NREPORT* if in a no report mode. The field remains blank if the tag is in its reporting mode.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 111,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing, charlength,startchar*

Example: **ed 111,32,55,1200,550,124,5,0,1,2,0**

ed 112 (quality override indicator)

Dynamic Data

PURPOSE: The quality override (driven) indicator presents a variable length text field to indicate whether the quality of the tag has been overridden (driven into another condition). The default text string presented by the command is *^QUALITY* if the quality has been overridden in the PCU control module. The field remains blank if not overridden.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 112,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing, charlength,startchar*

Example: **ed 112,32,55,1100,550,124,5,0,1,1,0**

ed 113 (alarm priority)

Dynamic Data

PURPOSE: The alarm priority command enables a variable length text field to present a text string that corresponds to the current alarm priority condition for a tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 113,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar*

Example: **ed 113,32,20,2000,3000,124,3,0,7,1,8,0**

DISCUSSION: Table 3-12 lists the default text descriptors presented by this command and the associated alarm priority for each text string.

Table 3-12. Alarm Priority Descriptors

Priority	Descriptor
1	DIRE
2	CRUCIAL
3	CRITICAL
4	ALERT
5	WARNING
6	ADVISE
7	NOTIFY
8	INFORM

ed 114,32 (alarm state)

Dynamic Data

PURPOSE: The alarm state command enables a two-character text field to present the current alarm state of a tag. Table 3-8 shows the default text strings presented by this command.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 114,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing*

Example: **ed 114,32,23,4500,3600,124,3,0,7,1**

ed 114 (next highest or next lowest alarm state)

Dynamic Data

PURPOSE: The next highest or next lowest alarm state command enables a two-character text field to display either the next high alarm condition or next low alarm condition for a tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 114,***subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, spacing*

Parameter	Description
subtype	35-next high. 36-next low.

Example: **ed 114,35,55,4300,6250,124,3,0,1**

DISCUSSION: The default text strings for this command are the same as those for the alarm quality/status command (refer to Table 3-8). The field appears as blank if the tag is in its highest or lowest alarm state. Table 3-13 shows the conditions that determine the next low or next high alarm state indication.

ed 114 (next highest or next lowest alarm state) *continued*

Dynamic Data

Table 3-13. Next High and Low Alarm State

Current State	Next High Field	Current State	Next Low Field
Blank or N	H	Blank or N	L
H	2H or blank	L	2L or blank
2H	3H or blank	2L	3L or blank
3H or all other states (L, 2L, 3L, LD, HD, LR, HR)	Blank	*3L* or all other states (*H*, *2H*, *3H*, *LD*, *HD*, *LR*, *HR*)	Blank

ed 115 (quality)

Dynamic Data

PURPOSE: The quality command enables a variable length text field that presents the current quality being reported for a tag. The default text strings presented by this command are:

_GOOD *xOFFSCAN*
?SUSPECT *iINHIBIT*
**BAD* *sSUBSTITUTED*

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 115,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing, charlength,startchar*

Example: **ed 115,32,55,1250,2500,124,3,0,1,1,0**
ed 115,32,55,1250,2500,124,3,0,1,8,1

ed 116 (next alarm limit)

Dynamic Data

PURPOSE:

The next alarm limit command presents a floating point alarm limit value to show either the next highest or next lowest alarm threshold level for the tag. This shows the value at a fixed position on the display. The field does not appear if the process control point is indicating a low or high rate of change alarm, or low or high deviation alarm.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 116,*subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, spacing,charlength,decdigits*

Parameter	Description
subtype	35 - next high alarm limit. 36 - next low alarm limit.

Example: **ed 116,35,55,2569,2002,124,3,0,1,6,2**

ed 117 (moving next alarm limit)

Dynamic Data

PURPOSE:

The moving next alarm limit command presents two floating point alarm limit values that move up or down a scaled range. The values are the next highest and next lowest alarm threshold level for the tag. This shows the values proportionally within a scaled range.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 117,*subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor, spacing,charlength,decdigits,scale*

Parameter	Description
subtype	39 - vertical movement. 40 - horizontal movement.
x-coord,y-coord	Starting point. Identifies the position of the low reference value. The alarm limit values are drawn proportionally between the high reference value and low reference value. The position of the high reference value is the *x-coord,y-coord* starting point plus the *scale*.
scale	Number of display units separating the high reference value and low reference value. The starting point for the scale is *x-coord,y-coord*.

Example: **ed 117,39,55,2569,2002,124,3,0,1,6,2,1400**

ed 118 (moving next alarm limit tick marks)

Dynamic Data

PURPOSE:

The moving next alarm limit tick marks command enables two horizontal or vertical line segments (tick marks) that move within a scaled range. The line segments mark the proportional position of the next highest and next lowest alarm limits. Each moves within the range of low reference value to high reference value set in the PCU control module.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 118,*subtype,tag,x-coord,y-coord,charsize,fgcolor,bgcolor,scale*

Parameter	Description
subtype	39 - vertical movement. 40 - horizontal movement.
x-coord,y-coord	Starting point. Identifies the position of the low reference value. The alarm limit tick marks are drawn proportionally between the high reference value and low reference value. The position of the high reference value is the *x-coord,y-coord* starting point plus the *scale*.
scale	Number of display units separating the high reference value and low reference value. The starting point for the scale is *x-coord,y-coord*.

Example: **ed 118,39,55,2569,2002,124,3,0,1400**

ed 119 (DADIG alarm state latch indicator)

Dynamic Data

PURPOSE: The DADIG alarm state latch indicator command enables a text field that indicates if the current value or state has been latched. The default text displayed by this command is *LATCHED*.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 119,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing, charlength,startchar*

Example: **ed 119,32,55,1000,1150,124,3,0,1,7,0**

ed 120 (text string)

Dynamic Data

PURPOSE: The text string command presents a variable length text field (80 characters maximum) to display the current text string received for the tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 120,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,almcolor, spacing,charlength,startchar,truncopt*

Parameter	Description
truncopt	0 - no truncation. 1 - truncate.

Example: **ed 120,32,15,1850,750,124,3,0,0,1,80,0,1**

ed 121 (text string - interlock indicator)

Dynamic Data

PURPOSE:

The text string (interlock indicator) command presents a lock status indication. The indication is either *USER TEXT LOCK* or blank. When locked, the console and PCU module do not accept any operator entered text string.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 121,32,*tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing, charlength,startchar,truncopt*

Parameter	Description
truncopt	0 - no truncation. 1 - truncate.

Example: **ed 121,32,15,8059,1150,124,3,0,1,14,0,0**

ed 122 (text string - truncation indicator)

Dynamic Data

PURPOSE:

The text string (truncation indicator) command presents a truncation indication for a tag. The default text used to indicate truncation is *TRNC*. The indication allows determining whether or not remote (PCU module or interface unit level) truncation has occurred for the text string presented.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ed 122,32,*tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing, charlength,startchar,truncopt*

Parameter	Description
truncopt	0 - no truncation. 1 - truncate.

Example: **ed 122,32,15,9000,950,124,3,0,1,4,0,0**

ed 123 (text string - received length)

Dynamic Data

PURPOSE: The text string (received length) command indicates the length of the text string received in an exception report for a tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 123,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 123,32,15,1500,2200,124,3,0,1**

ed 128 (value without alarm/quality color options)

Dynamic Data

PURPOSE: The value without alarm/quality color options command presents the real value being exception reported for a specified tag. This command functions the same as **ed 42** but the value displayed will be unaffected by the blinking or color changes associated with the alarm condition of the tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 128,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing, charlength,decdigits,vartype*

Parameter	Description
vartype	0 - process variable or state of a digital type of tag. 1 - set point. 2 - control output. 3 - ratio index.

Example: **ed 128,32,2,1754,1832,124,3,0,1,6,2,0**

ed 129 (logic state descriptor without alarm/quality color options)

Dynamic Data

PURPOSE: The logic state descriptor without alarm/quality color options command presents the logic state descriptor corresponding to the digital state exception reported for a specified tag. This command functions the same as **ed 37** but the descriptor displayed will be unaffected by the blinking or color changes associated with the alarm condition of the tag. The descriptor that appears depends on both the state being reported and the descriptor defined for that state during tag configuration.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 129,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 129,32,8,1599,1512,124,3,0,1**

ed 130 (text string without alarm/quality color options)

Dynamic Data

PURPOSE: The text string without alarm/quality color options command presents a variable length text field (80 characters maximum) to display a text string for a tag. This command functions the same as **ed 122** but the text string displayed will be unaffected by the blinking or color changes associated with the alarm condition of the tag. It displays the current text string received for the tag.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 130,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing, charlength,startchar,truncopt*

Parameter	Description
truncopt	0 - no truncation. 1 - truncate.

Example: **ed 130,32,15,1850,750,124,3,0,1,80,0,1**

ed 131,32 (text string - override enable status)

Dynamic Data

PURPOSE: The text string (override enable status) escape displays a text indicator to identify the override enable status of an enhanced analog or enhanced digital tag. The text displayed is derived from the override enable status configurable text set. The default text is *OVR* if the tag is overriden, and blank if it is not.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ed 131,32,***tag,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing*

Example: **ed 131,32,8,1599,1512,124,3,0,1**

ei 107,82 (touch point select - display)

Interactive

PURPOSE: The touch point select (display) command defines a touch point area on the screen used to call another display from the current display.

COMMAND: **ei 107,82,***x1-coord,y1-coord,x2-coord,y2-coord,display~*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.
display	Eight-character name of the display followed by a tilde (~). Specifies the display to call after initiating a touch point select. The name must be of an assembled display file (***.DU***) on the hard disk.

Example: **ei 107,82,3694,6290,4494,6490,AREA1~**

ei 107,83 (touch point select - control)

Interactive

PURPOSE: The touch point select (control) command defines a touch point area on the screen used to enable control of a tag element.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ei 107,83,***x1-coord,y1-coord,x2-coord,y2-coord,tag,cntrlgrp,cntrlopt, x3-coord,y3-coord,x4-coord,y4-coord,color,x5-coord,y5-coord*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.
cntrlgrp	32 - RCM. 33 - STATION. 34 - RMSC. 36 - DD or MSDD. 37 - RMCB. 38 - DANG. 39 - DADIG. 40 - TEXTSTR. 42 - ANALOG. 43 - DIGITAL.
cntrlopt	32 - prompt at bottom line. Not valid for *cntrlgrp* 38 and 39. 33 - prompt in box. 34 - combination bottom line prompt with highlight box. Not valid for *cntrlgrp* 38 and 39. 35 - combination disjoint prompt with tag name and highlight box.
x3-coord,y3-coord	Required only if *cntrlopt* is 33, 34, or 35. Defines the lower left corner of the highlight box.
x4-coord,y4-coord	Required only if *cntrlopt* is 33, 34, or 35. Defines the upper right corner of the highlight box.
color	Required only if *cntrlopt* is 33, 34, or 35. Color to use for the box outline when deselected. Refer to Table 3-2 for color index numbers.
x5-coord,y5-coord	Required only if *cntrlopt* is 35. Defines the left justification coordinate.

Example: **ei 107,83,496,496,2676,2076,1,36,33,496,496,2676,2076,4**

ei 107,85 (touch point select - soft key)

Interactive

PURPOSE: The touch point select (soft key) command defines a touch point area on the screen used to call either a tuning, block details, or module problem report display or to initiate a log printout from the current display. The command can be defined to either contain parameters that define the input requirements necessary to directly initiate a function or to allow entering the necessary inputs after selection.

COMMAND: **ei 107,85,***x1-coord,y1-coord,x2-coord,y2-coord,fcncode,p1,m1,p2, m2,p3,m3,p4,m4,p5,m5*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.
fcncode	0 - tuning display. 1 - block details display. 2 - not used. 3 - log by name. 4 - module problem report.
pn	Parameters to be passed such as loop, PCU, and module address, tag index number, PID block address, etc. Refer to Table 3-14 for the number of parameters (*n*) required, which is dependent on *fcncode*.
mn	Modify flag: 0 - allow modify after selection. 1 - no modify. Each *pn* parameter must have an *mn* parameter.

Example: **ei 107,85,1000,1000,1400,1400,4,1,1,2,1,4,1**

Table 3-14. Soft Key Parameters

Function	Total Parameters (*n*)	Parameter Description
Tuning	1	Tag index to tune.
	4	PID block address.
	5	Tag index and PID block.
Block details	1	Tag index.
	4	Block address: Loop, PCU, module, block.
Log by name	2	Log index and retention.
Module problem	3	Loop, PCU, module address.

ei 107,86 (touch point select - trend)

Interactive

PURPOSE: The touch point select (trend) command defines a touch point area on the screen used to enable a trend element for control. There must be a select command for each of the number of trends defined in an **et 53** command.

COMMAND: **ei 107,86,***x1-coord,y1-coord,x2-coord,y2-coord,trend,color,hiscale, loscale*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.
trend	Index number of a trend definition.
color	Color to use for the trend line associated with this command. Refer to Table 3-2 for color index numbers that can be assigned to a trend line.
hiscale	High scale limit for the trend.
loscale	Low scale limit for the trend.

Example: **ei 107,86,8710,6290,9510,6490,20,2,100.00,0.0**

ei 107,87 (touch point select - alarm summary)

Interactive

PURPOSE: The touch point select (alarm summary) command defines a touch point area on the screen used to enable an alarm summary element for control.

COMMAND: **ei 107,87,***x1-coord,y1-coord,x2-coord,y2-coord,x3-coord,y3-coord*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.
x3-coord,y3-coord	Must match the coordinates defined in an **as 82** command.

Example: **ei 107,87,400,6650,9600,7200,400,400**

ei 107,88 (touch point select - alarm summary primary display)

Interactive

PURPOSE: The touch point select (alarm summary primary display) command defines a touch point area on the screen used to call the primary display of a tag in the alarm summary list. A tag in the list must have a primary display assigned in its configuration for this command to have any effect.

COMMAND: **ei 107,88,***x1-coord,y1-coord,x2-coord,y2-coord*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.

Example: **ei 107,88,400,6294,9600,6641**

DISCUSSION: Define a command for each display select on an alarm line basis. For example, if the summary is set up to display 16 entries, then define 16 select commands. To use the interactive in an alarm summary, this **ei** command must follow an **as 82** command.

ei 107,90 (touch point select - pop up)

Interactive

PURPOSE: The touch point select (pop up) command defines a touch point area on the screen used to call a pop up symbol to the screen. The command contains parameters that define the location on the screen where the symbol appears. Make sure to leave this area clear to avoid overwriting a display area with a pop up.

COMMAND: **ei 107,90,***x1-coord,y1-coord,x2-coord,y2-coord,symbol~,x3-coord, y3-coord*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.
symbol	Name of a pop up symbol file to be displayed followed by a tilde (~).
x3-coord,y3-coord	Reference point coordinate to begin drawing the pop up symbol.

ei 107,90 (touch point select - pop up) *continued*

Interactive

Example: **ei 107,90,1000,1000,1400,1400,DCS1POP~,3180,4256**

NOTE: A maximum of 20 tags can be referenced in the pop up symbol.

DISCUSSION: Define the touch point area as the area of the screen used to select the pop up, ***not*** the area where the pop up appears. This is not a control select. The control select should be defined as part of the pop up symbol source file.

ei 107,91 (touch point select - pop up select with tag index substitution)

Interactive

PURPOSE: The touch point select (pop up select with tag index substitution) command defines a tag index number that is to be substituted for the index number defined in a pop up symbol source file. This enables using the same symbol source file in several pop up commands instead of creating a dedicated source file for each select command.

NOTE: The symbol file should not reference more than one unique tag when using tag index substitution; however, a maximum of 20 tags can be referenced.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ei 107,91,***x1-coord,y1-coord,x2-coord,y2-coord,symbol~,x3-coord, y3-coord,tag,***0,0,0**

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.
symbol	Name of a pop up symbol file to be displayed followed by a tilde (~).
x3-coord,y3-coord	Reference point coordinate to begin drawing the pop up symbol.
tag	Index number of the tag to substitute for tag index parameters in the pop up symbol.
0,0,0	Required.

Example: **ei 107,91,1000,1000,1400,1400,DCS1POP~,3180,4256,25,0,0,0**

ei 107,95 (touch point select - block details)

Interactive

PURPOSE: The touch point select (block details) command defines a touch point area on the screen used to enable a block details element for control.

COMMAND: **ei 107,95,***x1-coord,y1-coord,x2-coord,y2-coord,x3-coord,y3-coord*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.
x3-coord,y3-coord	Must match the coordinates defined in a **bd** command.

Example: **ei 107,95,400,6650,9600,7200,400,400**

ei 107,96 (touch point select - XY plot)

Interactive

PURPOSE: The touch point select (XY plot) command defines a touch point area on the screen used to enable an XY plot element for control. Define a command for each plot element of a display, maximum of four.

COMMAND: **ei 107,96,***x1-coord,y1-coord,x2-coord,y2-coord,element,plot*

Parameter	Description
element	Number of a plot element from 1 to 4.
plot	Index number to associate with the plot element from 1 to 80.

Example: **ei 107,96,7874,6290,9510,6490,1,23**

ei 107,97 (touch point select - tabular trend)

Interactive

PURPOSE: The touch point select (tabular trend) command defines a touch point area on the screen used to enable a tabular trend for control. There must be a select command for each of the number of trends defined in an **et 152** command.

COMMAND: **ei 107,97,***x1-coord,y1-coord,x2-coord,y2-coord,element,trend*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.
element	Number of a tabular trend element. This must match the element number identified in an associated **et 152** command.
trend	Index number of a trend definition.

Example: **ei 107,97,1186,6290,1950,6490,1,15**

ei 107,107 (touch point select - custom trend)

Interactive

PURPOSE: The touch point select (custom trend) command defines a touch point on the screen used to enable a trend element for control. It provides the capability to define a select command for each trend element, assigned in an **et 153** command, for which modification of scale ranges via a pointing device are desirable.

COMMAND: **ei 107,107,***x1-coord,y1-coord,x2-coord,y2-coord,element,trend*

Parameter	Description
x1-coord, y1-coord	Lower left corner coordinates.
x2-coord, y2-coord	Upper right corner coordinates.
element	Trend element number. This must match the trend-element number identified in an associated **et 153** command.
trend	Trend index number. This depends on the type number identified in an associated **et 153** command. If distributed trend, *trend* = 1 to system maximum, where system maximum = maximum number of trends configured on system. If operator assignable trend, *trend* = 1 to 26, where 1 to 6 are block output trends.

Example: **ei 107,107,8720,6290,9510,6490,4,20**

ei 107,113 (touch point select - user task activation)

Interactive

PURPOSE:

The touch point select (user task activation) command defines a touch point area on the screen used to execute a user-written program on a node containing the user task interface. This command can only be used with a 40 series console.

COMMAND:

ei 107,113,*x1-coord,y1-coord,x2-coord,y2-coord,nodename~, taskname~,activation,argument~*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.
nodename	Name of the node that contains the user task interface and user-written program. The node name can be a logical or actual node name. If using a logical, it must appear in the system logical name table. Use 0 if the user task interface and user-written program reside on this console. Maximum of 32 characters followed by a tilde (~).
taskname	Name of the UTI program to be executed. The name can be a logical or the actual name of the program. If using a logical, it must appear in the system logical name table. In either case, include the complete path along with the name (i.e., device and directory). Maximum of 32 characters followed by a tilde (~).
activation	0 - create. 1 - wake.
argument	An argument string to be passed to the program upon activation. Maximum of 80 characters followed by a tilde (~).

Example:

ei 107,113,1200,5200,1600,5600,USER$NODE~,USER$TASK~,/ 1,WINDOW:1~

DISCUSSION:

If using the create method of activation, the console expects the program to not be running. An error message occurs if the program is running and the operator attempts to execute (i.e., create) it again through a key or push-button selection. Infrequent, one-shot programs that do not require rapid activation can use this activation method.

The wake option expects the program to already be running, but not currently active (i.e., hibernating). If it is not running, the console will execute then activate the program. Frequently activated programs that could possibly be required to respond to multiple activation requests should use the wake activation method.

ei 107,113 (touch point select - multiwindow display activation)

Interactive

PURPOSE: The touch point select (multiwindow display activation) command defines a touch point area on the screen used to initiate a multiwindow display call up.

COMMAND: **ei 107,113**,*x1-coord,y1-coord,x2-coord,y2-coord,*__0~,OIS_MWD~,1,__ *argument~*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinates.
x2-coord,y2-coord	Upper right corner coordinates.
0~,OIS_MWD~,1	Required.
argument	Identifies a screen and the display that is to appear on the screen. Define an argument for each display call up: *screen1=display1* [*,screen2= display2,..., screen8=display8*]~

Example: **ei 107,113,120,480,280,640,0~,OIS_MWD~,1,1=GROUP1,/ 2=GROUP2,3=GROUP3, 4=GROUP4~**

ei 107,115 (touch point select - control/action)

Interactive

PURPOSE: The touch point select (control/action) command defines a touch area, on the screen, which is used to enable control of a tag element and issue a sequence of control actions, or generate a single (control or non-control) keystroke event.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND: **ei 107,115**,*x1-coord,y1-coord,x2-coord,y2-coord,cntrlseq, keycode1,tag,cntrlgrp,keycode2,keycode3,keycode4,keycode5, keycode6,keycode7,keycode8,keycode9,keycode10,contrlopt, x3-coord,y3-coord,x4-coord,y4-coord,color,x5-coord,y5-coord*

ei 107,115 (touch point select - control/action) *continued*

Interactive

Parameter	Description
x1-coord,y1-coord	Lower left hand coordinates of touch area.
x2-coord,y2-coord	Upper right hand coordinates of touch area.
cntrlseq	0 - Generate single control or non control keystroke event (no tag association). 1 - Generate single control action for specified tag. 2 - Select control window and issue control action sequence.
keycode1	Key code of first key in control sequence or key code of single control or non-control keystroke event.
tag	Required only if *cntrlseq* is set to 1 or 2; defines tag index (1 to system maximum).
cntrlgrp	Required only if *cntrlseq* is set to 1 or 2. Values are as follows: 32 - RCM. 33 - STATION. 34 - RMSC. 36 - DD or MSDD. 37 - RMCB. 38 - DANG. 39 - DADIG. 40 - TEXTSTR. 42 - ANALOG. 43 - DIGITAL.
keycode2 - keycode10	Remainder of key code sequence for control actions. Valid only if *cntrlseq* is set to 2.
cntrlopt	Required only if *cntrlseq* is set to 2. Values are as follows: 33 - prompt in highlight box. 34 - combination bottom line prompt with highlight box (not for TEXTSTR tags). 35 - combination disjoint prompt with tag name and highlight box.
x3-coord,y3-coord	Required only if *cntrlseq* is set to 2; defines lower left corner of the faceplate highlight box.
x4-coord,y4-coord	Required only if *cntrlseq* is set to 2; defines upper right corner of the faceplate highlight box.
color	Required only if *cntrlseq* is set to 2; number of the color to use for the faceplate box outline when deselected. Refer to Table 3-2 for color index numbers.
X5-coord,y5-coord	Required only if *cntrlseq* is set to 2 and *cntrlopt* is set to 35; defines the left justification coordinate.

ei 107,115 (touch point select - control/action) *continued*

Interactive

Example: **ei 107,115,496,1876,2676,2076,2,33706,100,36,33738,33722,/**
0,0,0,0,0,0,0,33,496,2676,2076,4

DISCUSSION:

If *cntrlseq* is non-zero, non-control key codes shall be ignored by the console software. Also, key sequences which enter numeric values or strings into prompt fields are not supported.

If placing multiple **ei 107,115** escapes (with *cntrlseq* set to 2) within the same control-window, the coordinate pairs for the highlight box area, the *tag* index, the *cntrlgrp* option and the *cntrlopt* option should be identical for all control select escapes within that control-window. These parameters shall be used by console software to uniquely identify faceplates.

The disjoint prompt box only option (*cntrlopt* = 32) has intentionally been excluded from this escape. Please note that this stipulation also affects **ei 107,83** escapes and **ei 108,83** escapes that may exist within the same control-window.

ei 107,116 (touch point select - @aGlance/IT user task activation)

Interactive

PURPOSE:

The touch point select (@aGlance/IT user task activation) command defines a touch point area on the screen used to send a command to a user-written @aGlance/IT server program. This command can only be used with a 40 series console.

COMMAND:

ei 107,116,*x1-coord,y1-coord,x2-coord,y2-coord,servername~, commandname~,connection~,argument~*

Parameter	Description
x1-coord, y1-coord	Lower left hand corner coordinates of touch area.
x2-coord, y2-coord	Upper right hand corner coordinates of touch area.
servername	Name of user-written @aGlance/IT server. The server name can be either a logical or actual server name. If using a logical, it must appear in the system logical name table. Maximum of 32 characters followed by a tilde (~).
commandname	Name of the server-specific comand to invoke. Maximum of 32 characters followed by a tilde (~).
connection	0 = disconnect 1 = keep connected
argument	A string to be passed with the command as one of the input values. Maximum of 80 characters followed by a tilde (~).

Example:

ei 107,116,1200,5200,1600,5600,USER$SERVER~, OIS_ACTIVATION~,1,STARTCLIENT~

DISCUSSION:

Due to restrictions imposed by the @aGlance/IT API, the console can only process one activation request at a time. When the console sends an activation message to a user's server, no other activation requests can be processed until the user's server has responded to the activation request. The server must define the specified command according to certain guidelines so that the console can process multiple activation requests quickly. Refer to the ***Open Data Server/Client*** instruction for additional information (Table 1-2 lists instruction numbers).

For @aGlance/IT user task touch point commands that will be only used on an occasional basis, it is suggested that the connection parameter be set to disconnect. This saves on server resources. This setting should also be used when the server provides only limited client access. For @aGlance/IT user touch point commands that will be used on a frequent basis, it is suggested that the connection parameter be set to keep connected. This allows for faster access to the server on subsequent touch point activations.

ei 108,82 (key select - display)

Interactive

PURPOSE: The key select (display) command defines a key or key sequence used to call another display from the current display. A **tx** command must be created to display the key characters defined in this command.

COMMAND: **ei 108,82,***key1,key2,display~*

Parameter	Description
display	Eight-character name of the display followed by a tilde (~). Specifies the display to call after initiating a touch point select. The name must be of an assembled display file (***.DU***) on the hard disk.

Example: **ei 108,82,65,0,AREA1~**

ei 108,83 (key select - control)

Interactive

PURPOSE:

The key select (control) command defines a key or key sequence used to enable control of a tag element. A **tx** command must be created to display the key characters defined in this command.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ei 108,83,*key1,key2,tag,cntrlgrp,cntrlopt,x1-coord,y1-coord, x2-coord,y2-coord,color,x3-coord,y3-coord*

Parameter	Description
cntrlgrp	32 - RCM. 33 - STATION. 34 - RMSC. 36 - DD or MSDD. 37 - RMCB. 38 - DANG. 39 - DADIG. 40 - TEXTSTR. 42 - ANALOG. 43 - DIGITAL.
cntrlopt	32 - prompt at bottom line. Not valid for *cntrlgrp* 38 and 39. 33 - prompt in box. 34 - combination bottom line prompt with highlight box. Not valid for *cntrlgrp* 38 and 39. 35 - combination disjoint prompt with tag name and highlight box.
x1-coord,y1-coord	Required only if *cntrlopt* is 33, 34, or 35. Defines the lower left corner of the highlight box.
x2-coord,y2-coord	Required only if *cntrlopt* is 33, 34, or 35. Defines the upper right corner of the highlight box.
color	Required only if *cntrlopt* is 33, 34, or 35. Color to use for the box outline when deselected. Refer to Table 3-2 for color index numbers.
x3-coord,y3-coord	Required only if *cntrlopt* is 35. Defines the left justification coordinate.

Example: **ei 108,83,49,65,1,36,33,496,496,2676,2076,4**

ei 108,85 (key select - soft key)

Interactive

PURPOSE: The key select (soft key) command defines a key sequence used to either call a tuning, block details, or module problem report display or to initiate a log printout from the current display. The command can be defined to either contain parameters that define the input requirements necessary to directly initiate a function or to allow entering the necessary inputs after selection. A **tx** command must be created to display the key characters defined in this command.

COMMAND: **ei 108,85,***key1,key2,fcncode,p1,m1,p2,m2,p3,m3,p4,m4,p5,m5*

Parameter	Description
fcncode	0 - tuning display. 1 - block details display. 2 - not used. 3 - log by name. 4 - module problem report.
pn	Parameters to be passed such as loop, PCU, and module address, tag index number, PID block address, etc. Refer to Table 3-14 for the number of parameters (*n*) required, which is dependent on *fcncode*.
mn	Modify flag: 0 - allow modify after selection. 1 - no modify. Each *pn* parameter must have an *mn* parameter.

Example: **ei 108,85,48,52,4,1,1,2,1,4,1**

ei 108,86 (key select - trend)

Interactive

PURPOSE: The key select (trend) command defines a key or key sequence used to enable trend element control. There must be a select command for each of the number of trends defined in an **et 53** command. A **tx** command must be created to display the key characters defined in this command.

COMMAND: **ei 108,86,***key1,key2,trend,color,hiscale,loscale*

Parameter	Description
trend	Index number of a trend definition.
color	Color to use for the trend line associated with this command. Refer to Table 3-2 for color index numbers that can be assigned to a trend line.
hiscale	High scale limit for the trend.
loscale	Low scale limit for the trend.

Example: **ei 108,86,66,0,20,2,100.00,0.0**

ei 108,87 (key select - alarm summary)

Interactive

PURPOSE: The key select (alarm summary) command defines a key or key sequence used to enable operations performed through an alarm summary element.

COMMAND: **ei 108,87,***key1,key2,x-coord,y-coord*

Parameter	Description
x-coord,y-coord	Must match the coordinates defined in an **as 82** command.

Example: **ei 108,87,83,0,400,400**

ei 108,88 (key select - alarm summary primary display)

Interactive

PURPOSE: The key select (alarm summary primary display) command defines a key or a key sequence used to call the primary display of a tag in the alarm summary list. A tag in the list must have a primary display assigned in its configuration for this command to have any effect.

COMMAND: **ei 108,88,***key1,key2*

Example: **ei 108,88,65,0**

DISCUSSION: Define a command for each display select on an alarm line basis. For example, if the summary is set up to display 16 entries, then define 16 select commands. A **tx** command must be created to display the key characters defined in this command. To use the interactive in an alarm summary, this **ei** command must follow an **as 82** command.

ei 108,90 (key select - pop up)

Interactive

PURPOSE: The key select (pop up) command defines a key or key sequence used to call a pop up symbol to the screen. The command contains parameters that define the location on the screen where the symbol appears. Make sure to leave this area clear to avoid overwriting a display area with a pop up. A **tx** command must be created to display the key characters defined in this command.

COMMAND: **ei 108,90,***key1,key2,symbol~,x-coord,y-coord*

Parameter	Description
symbol	Name of a pop up symbol file to be displayed followed by a tilde (~).
x-coord,y-coord	Reference point coordinate to begin drawing the pop up symbol.

Example: **ei 108,90,48,0,DCS1POP~,3180,4256**

NOTE: A maximum of 20 tags can be referenced in the pop up symbol.

ei 108,91 (key select - pop up with tag index substitution)

Interactive

PURPOSE:

The key select (pop up with tag index substitution) command defines a tag index number that is to be substituted for the index number defined in a pop up symbol source file. This enables using the same symbol source file in several pop up commands instead of creating a dedicated source file for each select command. A **tx** command must be created to display the key characters defined in this command.

> **NOTE:** The symbol file should not reference more than one unique tag when using tag index substitution; however, a maximum of 20 tags can be referenced.

TAG SUPPORT:

ANALOG	DANG	INTANG	RCM	TEXT
DAANALG	DD	INTDIG	RMCB	TEXTSTR
DADIG	DEVSTAT	MSDD	RMSC	
DADIGTL	DIGITAL	N90STA	STATION	

COMMAND:

ei 108,91,*key1,key2,symbol~,x-coord,y-coord,tag,***0,0,0**

Parameter	Description
symbol	Name of a pop up symbol file to be displayed followed by a tilde (~).
x-coord,y-coord	Reference point coordinate to begin drawing the pop up symbol.
tag	Index number of the tag to substitute for tag index parameters in the pop up symbol.
0,0,0	Required.

Example: **ei 108,91,48,0,DCS1POP~,3180,4256,25,0,0,0**

ei 108,95 (key select - block details)

Interactive

PURPOSE: The key select (block details) command defines a key or key sequence used to enable operations performed through a block details element.

COMMAND: **ei 108,95,***key1,key2,x-coord,y-coord*

Parameter	Description
x-coord,y-coord	Must match the coordinates defined in a **bd** command.

Example: **ei 108,95,83,0,400,400**

ei 108,96 (key select - XY plot)

Interactive

PURPOSE: The key select (XY plot) command defines a key or key sequence used to enable operations performed through an XY plot element. Define a command for each plot element of a display, maximum of four. A **tx** command must be created to display the key characters defined in this command.

COMMAND: **ei 108,96,***key1,key2,element,plot*

Parameter	Description
element	Number of a plot element from 1 to 4.
plot	Index number to associate with the plot element from 1 to 80.

Example: **ei 108,96,48,0,1,23**

ei 108,97 (key select - tabular trend)

Interactive

PURPOSE: The key select (tabular trend) command defines a key or key sequence used to enable a tabular trend for control. There must be a select command for each of the number of trends defined in an **et 152** command. A **tx** command must be created to display the key characters defined in this command.

COMMAND: **ei 108,97,***key1,key2,element,trend*

Parameter	Description
element	Number of a tabular trend element. This must match the element number identified in an associated **et 152** command.
trend	Index number of a trend definition.

Example: **ei 108,97,65,0,1,15**

ei 108,107 (key select - custom trend)

Interactive

PURPOSE: The key select (custom trend) command defines a key or key sequence used to enable trend element control. It provides the capability to define a select command for each trend element, defined in an **et 153** command, for which modification of scale ranges via keyboard are desirable. A **tx** command must be created to display key characters defined by this command.

COMMAND: **ei 108,107,***key1,key2,element,trend*

Parameter	Description
element	Trend element number. This must match the trend-element number identified in an associated **et 153** command.
trend	Trend index number. This depends on the type number identified in an associated **et 153** command. If distribute trend, *trend* = 1 to System Maximum, where System Maximum = maximum number of trends configured for system. If operator assignable trend, *trend* = 1 to 26, where 1 to 6 are block output trends.

Example: **ei 108,107,66,0,4,20**

ei 108,113 (key select - user task activation)

Interactive

PURPOSE: The key select (user task activation) command defines a key or key sequence used to execute a user-written program on a node containing the user task interface. This command can only be used with a 40 series console.

COMMAND: **ei 108,113**,*key1,key2,nodename~,taskname~,activation,argument~*

Parameter	Description
nodename	Name of the node that contains the user task interface and user-written program. The node name can be a logical or actual node name. If using a logical, it must appear in the system logical name table. Use 0 if the user task interface and user-written program reside on this console. Maximum of 32 characters followed by a tilde (~).
taskname	Name of the UTI program to be executed. The name can be a logical or the actual name of the program. If using a logical, it must appear in the system logical name table. In either case, include the complete path along with the name (i.e., device and directory). Maximum of 32 characters followed by a tilde (~).
activation	0 - create. 1 - wake.
argument	An argument string to be passed to the program upon activation. Maximum of 80 characters can be entered followed by a tilde (~).

Example: **ei 108,113,49,65,USER$NODE~,USER$TASK~,1,WINDOW:1~**

DISCUSSION: If using the ***create*** method of activation, the console expects the program to not be running. An error message occurs if the program is running and the operator attempts to execute (i.e., create) it again through a key or push-button selection. Infrequent, one-shot programs that do not require rapid activation can use this activation method.

The ***wake*** option expects the program to already be running, but not currently active (i.e., hibernating). If it is not running, the console will execute then activate the program. Frequently activated programs that could possibly be required to respond to multiple activation requests should use the wake activation method.

ei 108,113 (key select - multiwindow display activation)

Interactive

PURPOSE: The multiwindow display activation touch point select command defines a key or key sequence used to initiate a multiwindow display call up.

COMMAND: **ei 108,113**,*key1*,*key2*,**0~,OIS_MWD~,1,** *argument~*

Parameter	Description
0~,OIS_MWD~,1	Required.
argument	Identifies a screen and the display that is to appear on the screen. Define an argument for each display call up: *screen1=display1* [,*screen2= display2,..., screen8=display8*]~

Example: **ei 108,113,0,0~,OIS_MWD~,1,1=GROUP1,2=GROUP2,/ 3=GROUP3,4=GROUP4~**

ei 108,116 (key select - @aGlance/IT user task activation)

Interactive

PURPOSE: The key select (@aGlance/IT user task activation) command defines a key or key sequence used to send a command to a user-written @aGlance/IT server program. This command can only be used with a 40 series console.

COMMAND: **ei 108,116**,*key1,key2,servername~,commandname~,connection~, argument~*

Parameter	Description
servername	Name of the @aGlance/IT server where the user-written program is located. The server name can be either a logical or actual server name. If using a logical, it must appear in the system logical name followed by a tilde (~).
commandname	Name of the server-specific command to invoke. Maximum of 32 characters followed by a tilde(~).
connection	0 = disconnect 1 = keep connected
argument	A string to be passed with the command as one of the input values. Maximum 80 characters followed by a tilde (~).

ei 108,116 (key select - @aGlance/IT user task activation) *continued*

Interactive

Example: **ei 108,116,9,65,USER$SERVER~,REMOTE_ACTIVATION~,1, STARTCLIENT~**

DISCUSSION: Due to restrictions imposed by the @aGlance/IT API, the console can only process one activation request at a time. When the console sends an activation message to a user's server, no other activation requests can be processed until the user's server has responded to the activation request. The server must define the specified command according to certain guidelines so that the console can process multiple activation requests quickly. Refer to the ***Open Data Server/Client*** instruction for additional information (Table 1-2 lists instruction numbers).

For @aGlance/IT user task key select commands that will be only used on an occasional basis, it is suggested that the connection parameter be set to disconnect. This saves on server resources. This setting should also be used when the server provides only limited client access. For @aGlance/IT user key select commands that will be used on a frequent basis, it is suggested that the connection parameter be set to keep connected. This allows for faster access to the server on subsequent key select activations.

em (end metafile)

File Delimiter

PURPOSE: The end metafile command marks the end of the display source file.

COMMAND: **em**

ep (end picture)

File Delimiter

PURPOSE: The end picture command causes a picture output.

COMMAND: **ep**

es (symbol)

Graphic Attribute

PURPOSE: The symbol command allows using a symbol created in a separate symbol source file as part of the current display. In this way, a symbol can be created only once and used in several different displays with minimal modifications. The command normally appears in the body of the file.

COMMAND: **es** *symbol~,color,x-coord,y-coord,tag*

Parameter	Description
symbol	Name of a symbol file followed by a tilde (~).
color	Refer to Table 3-2 for color index numbers. The color parameter changes the first of each color command encountered in the symbol file.
tag	Optional; tag to be used in the symbol being called. If not required or to use the tags defined in the symbol file, use 0.

Example: **es MODLINE~,1,1600,5800,25**

et 53 (trend element)

Trend Element

PURPOSE: The trend element command creates a single trend element that presents the values collected for a maximum of five trends. This type trend element shows the trended data on a graph as a continuous trend line. The command defines the size, resolution, pan option, x,y coordinate position, and deselected outline color of the element only. Depending on the size chosen, maximum of four trend elements can appear in one display.

COMMAND: **et 53,***size,resperiod,resunits,numtrends,panopt,x1-coord,y1-coord, x2-coord,y2-coord,color*

Parameter	Description
size	32 - 100 × 100 key select only. 33 - 50 × 100 key select only. 34 - 100 × 50 key select only. 35 - 50 × 50 key select only. 40 - 100 × 100 key and touch point select. 41 - 50 × 100 key and touch point select. 42 - 100 × 50 key and touch point select. 43 - 50 × 50 key and touch point select.

et 53 (trend element) *continued*

Trend Element

Parameter	Description
resperiod	Display resolution. Normally 1 for one-minute resolution or 15 for 15-second resolution when the element contains only standard trends. When it includes enhanced trends, this must either match the collection resolution of all trends that are to appear in the element, or it must be the least common multiple or any multiple of all collection resolutions when the resolutions vary.
resunits	32 - seconds. 33 - minutes. 34 - hours.
numtrends	Number of trends in element from 1 to 5.
panopt	32 - pan with update window. 33 - pan without update window.
x1-coord,y1-coord	Lower left corner x,y coordinate of the trend element.
x2-coord,y2-coord	Upper right corner x,y coordinate of the trend element including the control box portion of the element.
color	Color to use when control disabled. Refer to Table 3-2 for color index numbers.

Example: **et 53,35,1,33,5,33,5000,800,9600,3800,4**

DISCUSSION:

The *x1-coord,y1-coord* and *x2-coord,y2-coord* parameters indicate the lower left and upper right corner positions of the entire trend element including both the trend graph and control box portions of the element. These must be accurate or the trend will not display properly. The coordinates must reflect the size option chosen in the option parameter. ***STANDARD TREND DISPLAY*** in Appendix A gives an example of a source file that uses the **et 53** command.

To create a complete trend element, additional commands are necessary.

1. An **es** command to access a trend symbol (e.g., TRNDPVFL, TRNDCOFL, TRNDSPFL, etc.) for each trend dependent on the number of trends defined in the *numtrends* parameter.

2. Control select using both key (**ei 108,86**) and touch point (**ei 107,86**) for each trend of the element. There should be one of each of these commands for the number of trends defined in the *numtrends* parameter.

3. A text descriptor (**tx**) for each control key select command (**ei 108,86**).

et 53 (trend element) *continued*

Trend Element

4. A text color (**tc**) for each key select character corresponding to the color defined in an associated trend symbol.

The following example creates a display containing four 50 × 50 trend elements. The conditions that exist for this example are:

- Trend element one contains five active trends with a display resolution of one minute.
- Trend element two contains only three active trends with the remaining two defined to provide the vertical spacing requirements only. The display resolution is one minute.
- Trend element three contains only three active trends with a display resolution of one minute.
- Trend element four contains five active trends with a display resolution of 15 seconds.

et 152 (tabular trend element)

Trend Element

PURPOSE: The tabular trend element command creates a trend element that presents the values collected for a maximum of ten trends. This type trend element shows the trended data in a tabular format (columns). The command defines overall characteristics of the element. Other features of the element must be created using **su** commands.

COMMAND: **et 152,32,***element,resperiod,resunits,numtrends,x1-coord,y1-coord, x2-coord,y2-coord,color,numsamples,time,limitcolor,y-top,x-time*

Parameter	Description
element	Element number from 1 to 30 used to identify this tabular trend. This number is referenced in associated **ei** and **su** commands.
resperiod	Display resolution. Normally 1 for one-minute resolution or 15 for 15-second resolution when the element contains only standard trends. When it includes enhanced trends, this must either match the collection resolution of all trends that are to appear in the element, or it must be the least common multiple or any multiple of all collection resolutions when the resolutions vary.

et 152 (tabular trend element) *continued*

Trend Element

Parameter	Description
resunits	32 - seconds. 33 - minutes. 34 - hours.
numtrends	Number of trends in element from 1 to 10.
x1-coord,y1-coord	Lower left corner of highlight box.
x2-coord,y2-coord	Upper right corner of highlight box.
color	Color to use when control disabled. Refer to Table 3-2 for color index numbers.
numsamples	Number of displayed intervals per trend (or number of rows). Requires a minimum of ten.
time	Time format: 0 - mm:ss. 1 - hh:mm. 2 - hh:mm:ss. 3 - dd hh. 4 - dd hh:mm.
limitcolor	Color to use when a trend value reaches either a high or low limit. Refer to Table 3-2 for color index numbers.
y-top	Y-coordinate position of interval top line point (i.e., top line of element).
x-time	X-coordinate position of the time-stamp column.

Example: **et 152,32,1,1,33,10,400,400,9600,6600,4,30,1,2,6290,450**

DISCUSSION: ***TABULAR TREND DISPLAY*** in Appendix A gives an example of a source file that uses the **et 152** command.

et 153 (custom trend element)

Trend Element

PURPOSE:

The custom trend element command creates a single trend element that presents the values collected for a maximum of five trends. This type of trend element shows the trended data on a graph as a continuous trend line. The command defines the: type, trend element, resolution, x and y coordinate position, deselected outline color or the element only, number of samples of the element only, pan option, trend display area, trend background and grid colors, number of grid divisions, and number of samples in the update window and between lines. Depending on the size chosen, a maximum of eight trend elements can appear in one display. A **su** command must be created to display the trend lines for the trend element defined by this command. Other features of the custom trend element can be created with **ei** and **su** commands.

COMMAND:

et 153,*type,element,resunits,numtrends,x1-coord,y1-coord,*
x2-coord,y2-coord,color,samples,panopt,traceopt,x3-coord,
*y3-coord,x4-coord,y4-coord,gridopt,bgcolor,gridcolor,griddiv,***0,**
updamples,tlinesamples

Parameter	Description
type	32 - distributed. 33 - operator assignable.
element	Trend element number from 1 to 8.
resunits	32 - seconds. 33 - minutes. 34 - hours.
numtrends	Number of trends in an element from 1 to 5.
x1-coord,y1-coord	Lower left hand corner of highlight box.
x2-coord,y2-coord	Upper right hand corner of highlight box.
color	Color to use when control disabled. Refer to Table 3-2 for color index numbers.
samples	Number of displayed data samples per trend. Requires a minimum of 20. Maximum allowable is 960.
panopt	32 - pan with update window 33 - pan without update window
traceopt	0 - Left to right, time cursor displayed on bottom. 1 - Right to left, time cursor displayed on bottom 2 - Bottom to top, time cursor displayed on right 3 - Top to bottom, time cursor displayed on right 4 - Left to right, time cursor displayed on top 5 - Right to left, time cursor displayed on top 6 - Bottom to top, time cursor displayed on left 7 - Top to bottom, time cursor displayed on left
x3-coord,y3-coord	Lower left corner x, y coordinate of trend element.

et 153 (custom trend element) *continued*

Trend Element

Parameter	Description
x4-coordy4-coord	Upper right corner x, y coordinate of trend element.
gridopt	Grid option 0 - grid off 1 - grid on
bgcolor	Background color of trend area. Refer to Table 3-2 for color index numbers.
gridcolor	Grid color. Refer to Table 3-2 for color index numbers.
griddiv	Number of grid divisions from 1 to 1240.
0	Required
updsamples	Number of samples in update window. This is the number of samples displayed before the element is scrolled. If custom trend time scale **(su 153,107)** is defined then this value must be a multiple of the time scale value *(timesclval*) parameter. If custom trend time scale **(su 153,107)** is not defined and the number of samples between each time line *(tlinesamples)* is not zero, then this value must be a multiple of the samples between each time line. If custom trend time scale **(su 153,107)** is not defined and the number of samples between each time line *(tlinesamples)* is zero, then this value will range between 10 and the number of samples - 10.
tlinesamples	Number of samples between each time line. Value will either be 0 or 10 to number of samples. Value must be a multiple of ten.

Example: **et 153,32,1,33,2,500,600,9000,7000,4,100,32,2,600,700,8900,/ 6900,1,6,10,0,20,10**

DISCUSSION: The x3-coord, y3-coord and x4-coord, y4-coord parameters indicate the lower left and upper right corner positions of the trend element including both the trend graph and control box portions of the element. These must be accurate or the trend will not display properly. ***CUSTOM TREND DISPLAY*** in Appendix A gives an example of a source file that uses the **et 153** command.

et 153 (custom trend element) *continued*

Trend Element

To create a complete trend element, additional commands are necessary.

1. The **su 153,110** must be defined for each displayed trend element. This command defines the color, scale and width of displayed trend lines.

2. Other **su** display commands (i.e. **su 153,107**; **su 153,108**; **su 153,109**) are optional. These **su** display commands refer to the following custom trend display features: time scale, time cursor, and control status.

3. Trend control selection escape commands are available. They provide keyboard (**ei 108,107**) or pointer (**ei 107,107**) activation of a trend element. These commands can be defined for a specific trend element.

et 154 (XY plot element)

XY Plot Element

PURPOSE:

The XY plot element command creates an element that can be used to compare a maximum of five variables against a sixth or five separate pairs of variables. This type element shows the data on a graph as either a single point, multiple points, or a continuous line. The command defines the overall characteristics of the plot element. Other features of the element must be created using **su** commands.

COMMAND:

et 154,32,*element,numplots,x1-coord,y1-coord,x2-coord,y2-coord,*
*x3- coord,y3-coord,x4-coord,y4-coord,color,gridopt,numx,numy,***0,0,**
x5-coord,y5-coord,XOR

Parameter	Description
element	Element number from 1 to 4 used to identify this XY plot element. This number is referenced in associated **ei** and **su** commands.
numplots	Number of plots in element from 1 to 5.
x1-coord,y1-coord	Lower left corner of highlight box.
x2-coord,y2-coord	Upper right corner of highlight box.
x3-coord,y3-coord	Lower left corner of element outline box.
x4-coord,y4-coord	Upper right corner of element outline box.
color	Color to use when control disabled. Refer to Table 3-2 for color index numbers.

et 154 (XY plot element) *continued*

XY Plot Element

Parameter	Description
gridopt	Grid option: 0 - grid off. 1 - grid on.
numx	Number of x-axis grid divisions.
numy	Number of y-axis grid divisions.
0,0	Required.
x5-coord,y5-coord	Position of *Target* prompt.
XOR	Drawing mode. Ignored for a tag or trend data source plot. 0 - XOR mode enabled. 1 - XOR mode disabled. **NOTE:** When the console has an IIMGC01 Multibus Graphics Controller Module, disable XOR drawing mode.

Example: **et 154,32,1,5,7420,1200,9600,7200,500,1200,7420, 7200,4,1,10,/ 10,0,0,7500,800,0**

DISCUSSION:

The highlight coordinates defined in this element should not be the same as the box coordinates in the same escape due to border color conflicts. If they are, the plot select highlight color will be unpredictable as the plot border color changes.

When drawing in XOR mode, two colors that overlap produce a third color at the point of overlap. Color A XORed with color B will produce some color C.

To create a complete XY plot element, additional commands are necessary.

1. Optionally, an **es** command to access an XY plot symbol (e.g., XYAHF, XYDHF, XYSYM2 etc.) for each plot dependent on the number of plots defined in the *numplots* parameter.

2. Control select using both key (**ei 108,96**) and touch point (**ei 107,96**) for each plot of the element. There should be one of each of these commands for the number of plots defined in the *numplots* parameter.

3. A text descriptor (**tx**) for each control key select command (**ei 108,96**).

4. A text color (**tc**) for each key select character corresponding to the color defined in an associated plot symbol.

et 154 (XY plot element) *continued*

XY Plot Element

TAG OR TREND SOURCE XY PLOT DISPLAY in Appendix A gives an example of an XY plot display for either a tag or trend data source plot. This is a complete display. ***MFC DATA SOURCE XY PLOT ELEMENT*** in Appendix A gives an example of a single element of an MFC data source plot.

ex (VDC extent)

File Attribute

PURPOSE: The VDC extent command defines the unit size of the screen area. The default is 10,000 by 7,500 units, which is x,y coordinates of 0,0 lower left corner and 10000,7500 upper right corner. This is required only if changing the default size. Place the command at the beginning of the display source file.

COMMAND: **ex** *x-coord,y-coord*

Parameter	Description
x-coord	Lower left coordinate.
y-coord	Upper right coordinate.

Example: **ex 0,0,10000,7500**

fc (fill color)

Graphic Attribute

PURPOSE: The fill color command defines the color to use as the fill-in color of a closed figure such as a circle (**cc**) and polygon (**pg**). If using a fill color, the command must precede a **cc**, **rt**, **pg**, or **ca** command.

COMMAND: **fc** *color*

Parameter	Description
color	Refer to Table 3-2 for color index numbers.

Example: **fc 1**

is (interior style)

Graphic Attribute

PURPOSE: The interior style command defines the attributes of the interior portion of a closed figure, including fill-ins and outline perimeter. The command must be present before all polygon (**pg**) and circles (**cc**).

COMMAND: **is** *index,flag*

Parameter	Description
index	0 - hollow (do not use fill color). 1 - solid (use fill color).
flag	Perimeter flag. Determines if the perimeter or outline of the figure is on or off. 0 - no outline visible. 1 - outline visible.

Example: **is 1,0**

lc (line color)

Graphic Attribute

PURPOSE: The line color command specifies the color of the line used to draw a figure or line. The line color command must precede the line or figure being drawn.

COMMAND: **lc** *color*

Parameter	Description
color	Refer to Table 3-2 for color index numbers.

Example: **lc 2**

lt (line type)

Graphic Attribute

PURPOSE: The line type command specifies the type of line used to draw a figure or line. The line type command must precede the line or figure being drawn.

COMMAND: **lt** *type*

Parameter	Description
type	0 - solid. 1 - dash. 2 - dot. 3 - dash-dot. 4 - dash-dot-dot.

Example: **lt 0**

lw (line width)

Graphic Attribute

PURPOSE: The line width command specifies the width of a line expressed in number of display units (or VDC extent). The line width command must precede the line being drawn.

COMMAND: **lw** *units*

Parameter	Description
units	Number of display units.

Example: **lw 1**

mc (marker color)

Graphic Attribute

PURPOSE: The marker color command specifies the color of the marker used to draw a polymarker (**pm**) line. The marker color command must precede the polymarker command.

COMMAND: **mc** *color*

Parameter	Description
color	Refer to Table 3-2 for color index numbers.

Example: **mc 3**

ms (marker size)

Graphic Attribute

PURPOSE: The marker size command defines the size of the marker characters in display units (or VDC extent) that follow. If specifying a character height, the command must precede a **pm** command.

COMMAND: **ms** *units*

Parameter	Description
units	Number of display units.

Example: **ms 124**

mt (marker type)

Graphic Attribute

PURPOSE: The marker type command specifies the character type used as the marker character. The marker type command must precede the **pm** command.

COMMAND: **mt** *type*

Parameter	Description
type	0 - dot (.). 1 - plus (+). 2 - asterisk (*). 3 - circle (o). 4 - ×.

Example: **mt 2**

pe (program escape)

Control Command

PURPOSE: The program escape command loads control and applications programs. This escape provides control capabilities for INFI 90 display elements. The command must be present in a display or symbol source file to enable process control actions through that display or symbol.

COMMAND: **pe** *type,program~*

Parameter	Description
type	124 to identify the background task.
program	CONTROL followed by a tilde (~).

Example: **pe 124,CONTROL~**

DISCUSSION: Generally, any display without escape for control should ***not*** contain the **pe** command. This includes any menu display that does not require control action using either **ei 107,83** or **ei 108,83** and has only text and display selects using **ei 107,82** or **ei 108,82**.

pg (polygon)

Graphic Primitive

PURPOSE: The polygon command draws a polygon figure based on a starting point and a maximum of 30 displacement parameters. The attributes of the line creating the figure can be defined using an **lc**, **lt**, and **lw** command. When the polygon is to be filled, it must be preceded by an **is** and **fc** command and an **lc** command if perimeter is on for the **is** command.

COMMAND: **pg** *x-coord,y-coord;x-displace,y-displace~*

Parameter	Description
x-coord,y-coord	Starting point coordinate.
x-displace, y-displace	X-offset and y-offset display units from the start or last displacement. A maximum of 30 displacements can be defined with the last followed by a tilde (~).

Example: **pg 950,950;100,0;0,100;-100,0;0,-100~**

pl (polyline)

Graphic Primitive

PURPOSE: The polyline command draws a polyline figure based on a starting point and a maximum of 30 displacement parameters. The attributes of the line can be defined using an **lc**, **lt**, and **lw** command.

COMMAND: **pl** *x-coord,y-coord;x-displace,y-displace~*

Parameter	Description
x-coord,y-coord	Starting point coordinate.
x-displace, y-displace	X-offset and y-offset display units from the start or last displacement. A maximum of 30 displacements can be defined with the last followed by a tilde (~).

Example: **pl 950,950;100,0;0,100;-100,0~**

pm (polymarker)

Graphic Primitive

PURPOSE: The polymarker command draws a figure comprised of polymarker points. The figure is based on a starting point and a maximum of 30 displacement parameters. The attributes of the line can be defined using an **mc**, **mt**, and **ms** command.

COMMAND: **pm** *x-coord,y-coord;x-displace,y-displace~*

Parameter	Description
x-coord,y-coord	Starting point coordinate.
x-displace, y-displace	X-offset and y-offset display units from the start or last displacement. A maximum of 30 displacements can be defined with the last followed by a tilde (~).

Example: **pm 950,950;100,0;0,100;-100,0~**

rf (reference)

File Attribute

PURPOSE: The reference command provides a reference point when creating symbols. All coordinates of the symbol are referenced to this starting point. Use this command in symbol files only.

COMMAND: **rf** *x-coord,y-coord*

Example: **rf 400,1000**

rm (remark)

File Attribute

PURPOSE: The remark command can be used to enter remarks into the source file. These remarks do not appear in the final display presentation. Remarks can be placed anywhere in the file.

COMMAND: **rm** *text~*

Parameter	Description
text	Maximum of 69 characters followed by a tilde (~).

Example: **rm FULL STATION SYMBOL~**

rs (range symbol)

Dynamic Symbol

PURPOSE:

The range symbol command associates a symbol with a specified analog range, alarm condition, or digital state when creating advanced analog, advanced digital, and MSDD dynamic symbols. Currently, **rs** commands must immediately follow either an **ed 54,47**, **ed 54,49**, **ed 54,56**, or **ed 54,57** command. The command can be defined in two ways.

The first method of defining this command associates a symbol with a specified range. In this case, the console presents the designated symbol when a reported analog value is equal to or less than the range value specified in the command. When using ranges, the **rs** commands defining ranges must be placed in ascending order within the file. This can be used for an advanced analog dynamic symbol only.

COMMAND: (Method 1)

rs *range,symbol~,x-coord,y-coord,size,color,***0**

Parameter	Description
range	Real number to designate the upper boundary of this range. The format for this parameter is: *NNN.nnn* where: *NNN*Whole number. *nnn*Decimal fraction. A decimal point is required.
symbol	Name of a symbol file to be displayed followed by a tilde (~). The symbol defined here must not have any internal escapes.
size	Use 1.
color	Refer to Table 3-2 for color index numbers.
0	Required.

Example:

```
ed 54,49,1,0,0,3,5
rs 10.0,RANGE1~,500,2600,1,1,0
rs 15.0,RANGE2~,500,2600,1,2,0
rs 20.0,RANGE3~,500,2600,1,3,0
rs 25.0,RANGE4~,500,2600,1,5,0
rs 30.0,RANGE5~,500,2600,1,6,0
```

The second method of defining this command associates a symbol with an alarm condition or digital state. In this case, the console presents the designated symbol when the alarm condition or digital state indicated in the code parameter of the command is reported.

rs (range symbol) *continued*

Dynamic Symbol

COMMAND: (Method 2)

rs *code,symbol~,x-coord,y-coord,size,color,***0**

Parameter	Description
code	A real number code which selects the alarm condition, digital state, or quality the designated symbol is to represent. Refer to Table 3-15 for valid codes. A code follows the same format as a specified range; therefore, if the entered code is not valid it will be treated as a range.
symbol	Name of a symbol file to be displayed followed by a tilde (~). The symbol defined here must not have any internal escapes.
size	Use 1.
color	Refer to Table 3-2 for color index numbers.
0	Required.

Example:

ed 54,56,1,0
rs 53.0,NASTATE3~,500,2600,1,1,0
rs 52.0,NASTATE2~,500,2600,1,2,0
rs 51.0,NASTATE1~,500,2600,1,3,0
rs 50.0,NASTATE0~,500,2600,1,5,0

DISCUSSION:

When using the command to specify alarm conditions or states, quality conditions have precedence over alarm or state conditions. If both an alarm or state and quality condition occur at the same time, the symbol representing the quality condition displays.

Table 3-15. Advanced Dynamic Symbol Codes

Code	Condition	Symbol Type
30.0	No alarm	Analog
31.0	Low	Analog
32.0	High	Analog
33.0	2-low	Analog
34.0	2-high	Analog
35.0	3-low	Analog
36.0	3-high	Analog
37.0	Low deviation	Analog
38.0	High deviation	Analog
41.0	Substituted	Analog, digital, MSDD
42.0	Inhibited	Analog, digital, MSDD

rs (range symbol) *continued*

Dynamic Symbol

Table 3-15. Advanced Dynamic Symbol Codes (continued)

Code	Condition	Symbol Type
43.0	Disestablished	Analog, digital, MSDD
44.0	Bad quality	Analog, digital, MSDD
45.0	Suspect	Analog, digital, MSDD
46.0	Hardware failure	Analog, digital
50.0	State 0 (no alarm)	Digital, MSDD
51.0	State 1 (no alarm)	Digital, MSDD
52.0	State 2 (no alarm)	MSDD
53.0	State 3 (no alarm)	MSDD
54.0	State 0 (alarm)	Digital, MSDD
55.0	State 1 (alarm)	Digital, MSDD
56.0	State 2 (alarm)	MSDD
57.0	State 3 (alarm)	MSDD

Advanced dynamic symbols have the option of using a good quality or no alarm symbol in place of a bad quality or alarm symbol. The **rs** lines can be coded to permit:

1. The name or color of an alarm symbol to be replaced by the name or color of a range symbol.

2. The name or color of a quality symbol to be replaced by the name or color of a range symbol or the name or color of an alarm symbol depending on the value, alarm condition or quality being reported.

To do this, an **rs** command for an alarm and quality symbol can be coded having a blank (or missing) symbol name to indicate that some previous symbol should be used for occurrences of that type alarm or quality condition. Similarly, the color parameter for the **rs** command can be set to **-1** to indicate that the color should be taken from some previous symbol (color missing).

The order of precedence when selecting symbols or colors is quality over alarm, alarm over no alarm value (range), or state symbol. Therefore, if a symbol name in a quality **rs** command is missing, the name is replaced with the name found in the alarm symbol if one is defined. If a symbol name in an alarm **rs** command is missing, the name is replaced with the name found in the value according to range or state symbol. The same holds true for a missing color.

rs (range symbol) *continued*

Dynamic Symbol

A missing symbol name parameter must be coded as **,~,** with the tilde present. For example:

rs 34.0,~,500,2600,1,1,0

A missing color parameter must be coded as **,-1,**. For example:

rs 34.0,SYMNAME~,500,2600,1,-1,0

rt (rectangle)

Graphic Primitive

PURPOSE: The rectangle command draws a rectangle whose size and position is based on a lower left and upper right corner parameter. The attributes of the line creating the rectangle can be defined using an **lc** and **lt** command. When the rectangle is to be filled, it must be preceded by an **is** and **fc** command and an **lc** command if perimeter is on for the **is** command.

COMMAND: **rt** *x1-coord,y1-coord,x2-coord,y2-coord*

Parameter	Description
x1-coord,y1-coord	Lower left corner coordinate.
x2-coord,y2-coord	Upper right corner coordinate.

Example: **rt 496,496,2676,3752**

sm (security mask)

File Attribute

PURPOSE: The security mask command sets the security level access for a display and symbol.

COMMAND: **sm** *primlevel,*[*seclevel*]

Parameter	Description
primlevel	Security level from 1 to 16. The console checks the primary level first.
seclevel	Security level from 1 to 16. The console checks this level after the primary. The secondary level is optional.

Example:
sm 1
sm 1,10

sn (symbol name)

Dynamic Symbol

PURPOSE: The symbol name command associates a symbol with a specified analog alarm condition or digital state when creating analog and digital dynamic symbols or exception report discrete dynamic symbols. Currently, **sn** commands must immediately follow an **ed 54,45** (analog dynamic symbol), **ed 54,46** (digital dynamic symbol), or **ed 54,58** (exception report discrete dynamic) command.

COMMAND: **sn** *symbol~,x-coord,y-coord,***1,***color*

Parameter	Description
symbol	Name of a symbol file to be displayed followed by a tilde (~). The symbol defined here must not have any internal escapes.
1	Required.
color	Refer to Table 3-2 for color index numbers.

Example:
ed 54,46,1,0
sn NASTATE0~,500,2600,1,1
sn ALMSTATE0~,500,2600,1,2
sn NASTATE1~,500,2600,1,3
sn ALMSTATE1~,500,2600,1,5
sn BADQUAL~,500,2600,1,6

su 152,101 (tabular trend - high limit of column)

Trend Element

PURPOSE: The tabular trend (high limit of column) command displays the high limit value for each trend column in an element. The value and y-coordinate position for this command are derived from an **su 152,110** command.

COMMAND: **su 152,101,***element,y-coord*

Parameter	Description
element	Element number used to associate this command with a tabular trend element (**et 152** command).
y-coord	Y-coordinate position to display the high limit value. The x-coordinate position is taken from an **su 152,110** command.

Example: **su 152,101,1,1175**

su 152,102 (tabular trend - low limit of column)

Trend Element

PURPOSE: The tabular trend (low limit of column) command displays the low limit value for each trend column. The value and y-coordinate position for this command are derived from an **su 152,110** command.

COMMAND: **su 152,102,***element,y-coord*

Parameter	Description
element	Element number used to associate this command with a tabular trend element (**et 152** command).
y-coord	Y-coordinate position to display the low limit value. The x-coordinate position is taken from an **su 152,110** command.

Example: **su 152,102,1,1330**

su 152,103 (tabular trend - maximum of column)

Trend Element

PURPOSE: The tabular trend (maximum of column) command displays the highest value seen for each trend column. The y-coordinate position for this command is derived from an **su 152,110** command.

COMMAND: **su 152,103,***element,y-coord*

Parameter	Description
element	Element number used to associate this command with a tabular trend element (**et 152** command).
y-coord	Y-coordinate position to display the maximum value. The x-coordinate position is taken from an **su 152,110** command.

Example: **su 152,103,1,555**

su 152,104 (tabular trend - minimum of column)

Trend Element

PURPOSE: The tabular trend (minimum of column) command displays the lowest value seen for each trend column. The y-coordinate position for this command is derived from an **su 152,110** command.

COMMAND: **su 152,104,***element,y-coord*

Parameter	Description
element	Element number used to associate this command with a tabular trend element (**et 152** command).
y-coord	Y-coordinate position to display the minimum value. The x-coordinate position is taken from an **su 152,110** command.

Example: **su 152,104,1,865**

su 152,105 (tabular trend - average of column)

Trend Element

PURPOSE: The tabular trend (average of column) command displays the average value seen for each trend column. The y-coordinate position for this command is derived from an **su 152,110** command.

COMMAND: **su 152,105,***element,y-coord*

Parameter	Description
element	Element number used to associate this command with a tabular trend element (**et 152** command).
y-coord	Y-coordinate position to display the average value. The x-coordinate position is taken from an **su 152,110** command.

Example: **su 152,105,1,1730**

su 152,106 (tabular trend - summation of column)

Trend Element

PURPOSE: The tabular trend (summation of column) command displays the sum of all values seen for each trend column. The y-coordinate position for this command is derived from an **su 152,110** command.

COMMAND: **su 152,106,***element,y-coord*

Parameter	Description
element	Element number used to associate this command with a tabular trend element (**et 152** command).
y-coord	Y-coordinate position to display the summation value. The x-coordinate position is taken from an **su 152,110** command.

Example: **su 152,106,1,1730**

su 152,110 (tabular trend - high and low limits)

Trend Element

PURPOSE: The tabular trend (high and low limits) command defines the high and low limits of each trend.

COMMAND: **su 152,110,***element,trend,x-coord,width,decdigits,***0**,*color,hilimit, lolimit*

Parameter	Description
element	Element number used to associate this command with a tabular trend element (**et 152** command).
x-coord	X-coordinate column position for the trend data. The y-coordinate is the *y-top* parameter in an associated **et 152** command.
width	Column width expressed as number of digits.
decdigits	Number of digits from 0 to 4 that are to appear after a decimal point.
0	Required.
color	Refer to Table 3-2 for color index numbers.
hilimit	High limit value of the trend.
lolimit	Low limit value of the trend.

Example: **su 152,110,1,12,1186,8,2,0,3,60.0,0.0**

su 153,107 (custom trend - time scale)

Trend Element

PURPOSE:

The custom trend (time scale) command provides the capability to define the color, position, and format of the time scale for each defined trend element in an **et 153** command. This is an optional custom trend display command.

COMMAND:

su 153,107,*element,colorts,colorbts,offset,scalelim,timesf, timlinloc*

Parameter	Description
element	Trend element number. This must match the trend-element number identified in an associated **et 153** command.
colorts	Color trend time scale. Refer to Table 3-2 for color index numbers.
colorbts	Color of background for trend time scale. Refer to Table 3-2 for color index numbers.
offset	Offset of time scale in relation to trend graph area of the trend element. Offset should not be less than 60.
scalelim	Must be a multiple of the number of samples between each time line (*tlinesamples*) defined in **et 153** command.
timesf	Time scale format: 0 - dd - hh:mm. 1 - hh:mm. 2 - mm:ss. 3 - hh:mm:ss.
timlinloc	Location of the time line in relation to the trend graph area. 0 - Bottom 1 - Top 2 - Left 3 - Right

Example: **su 153,107,4,6,8,30,50,1,0**

su 153,108 (custom trend - time cursor)

Trend Element

PURPOSE: The custom trend (time cursor) command provides the capability to define the color of the time cursor and the position and color of the time/date display text associated with the time cursor position. This is an optional custom trend display command.

COMMAND:

su
153,108,*element,colordtf,colorbdtf,x-coord,y-coord,colortc,colorbtc*

Parameter	Description
element	Trend element number. This must match the trend-element number identified in an associated **et 153** command.
colordtf	Color of date/time field. Refer to Table 3-2 for color index numbers.
colorbdtf	Color of background for time/date field. Refer to Table 3-2 for color index numbers
x-coord	X coordinate of the time/date field.
y-coord	Y coordinate of the time/date field.
colortc	Color of time cursor. Refer to Table 3-2 for color index numbers.
colorbtc	Color of background for time cursor. Refer to Table 3-2 for color index numbers.

Example: **su 153,108,4,1,15,2000,4000,2,14**

su 153,109 (custom trend - control status)

Trend Element

PURPOSE: The custom trend (control status) command provides the capability to define the color of the trend control status field for each trend element. This is an optional custom trend display command.

COMMAND: **su 153,109,***element,colorcsf,colorbcsf,x-coord,y-coord*

Parameter	Description
element	Trend element number. This must match the trend-element number identified in an associated **et 153** command.
colorcsf	Color of trend control status field. Refer to Table 3-2 for color index numbers.
colorbcsf	Color of background for trend control status field. Refer to Table 3-2 for color index numbers
x-coord	X coordinate of the trend control status field.
y-coord	Y coordinate of the trend control status field.

Example: **su 153,109,4,1,15,2000,4000**

su 153,110 (custom trend - index attributes)

Trend Element

PURPOSE: The custom trend (index attributes) command provides the capability to define the color of the trend line, display of trend line identifier, format of the time scale, color and position of scale limits, and color and position of the value of the trend at the time cursor for each defined trend element in an **et 153** command. This command is required for use for each custom trend display.

COMMAND: **su 153,110,***element,trend,colortl,distio,highsl,colorhlsl, colorbsl,x1-coord,y1-coord,x2-coord,y2-coord,colorvtcp, colorvbtcp,x3-coord, y3-coord,***0***,widthtl*

Parameter	Description
element	Trend element number. This must match the trend-element number identified in an associated **et 153** command.

su 153,110 (custom trend - index attributes) *continued*

Trend Element

Parameter	Description
trend	Trend index number. This depends on the type number identified in an associated **et 153** command. If distributed trend, *trend* = 1 to system maximum, where system maximum = maximum number of trends configured on system. If operator assignable trend, *trend* = 1 to 26. Where 1 to 6 are block output trends.
colortl	Color of trend line. Refer to Table 3-2 for color index numbers.
distio	Display trend identifier option. 0 = NO 1 = YES
highsl	High scale limit from 0.0 to 999999.0
lowsl	Low scale limit from 0.0 to 999999.0
colorhlsl	Color of high and low scale limits. Refer to Table 3-2 for color index numbers.
colorbsl	Color of background for high and low scale limits. Refer to Table 3-2 for color index numbers.
x1-coord,y1-coord	High scale limit x and y coordinate.
x2-coord,y2-coord	Low scale limit x and y coordinate.
colorvtcp	Color of value at time cursor position. Refer to Table 3-2 for color index numbers.
colorvbtcp	Color of background at time cursor position. Refer to Table 3-2 for color index numbers.
x3-coord,y3-coord	Value time cursor x and y coordinate.
0	Required
widthtl	Width of trend line. Value must be between 1 and 4.

Example: **su 153,110,4,20,3,1,1000,100,5,12,4000,2000,2000,2000,10,14,/ 3000,3000,0,3**

su 154,110 (XY plot - high and low limit)

XY Plot Element

PURPOSE: The XY plot (high and low limits) command defines the position of the high scale limit, low scale limit, and last reported value fields for a pair of plotted variables.

COMMAND: **su 154,110,***element,plot,color,x1-coord,y1-coord,x2-coord, y2-coord,x3-coord,y3-coord,x4-coord,y4-coord,x5-coord,y5-coord, x6-coord,y6-coord,x7-coord,y7-coord*

Parameter	Description
element	Element number used to associate this command with an XY plot element (**et 154** command).
plot	Index number of a plot definition. Identifies the plotted variables used in the element. A valid entry is from 1 to 80. Refer to the discussion on XY plot definition in the ***Configuration*** instruction for additional information (Table 1-2 lists instruction numbers).
color	Refer to Table 3-2 for color index numbers.
x1-coord,y1-coord	X-axis variable low scale limit string x,y coordinate position.
x2-coord,y2-coord	X-axis variable high scale limit string x,y coordinate position.
x3-coord,y3-coord	Y-axis variable low scale limit string x,y coordinate position.
x4-coord,y4-coord	Y-axis variable high scale limit string x,y coordinate position.
x5-coord,y5-coord	X-axis variable last value string x,y coordinate position.
x6-coord,y6-coord	Y-axis variable last value string x,y coordinate position.
x7-coord,y7-coord	Update mode indicator x,y coordinate position.

Example: **su 154,110,1,1,5,8880,6660,8880,6835,8880,6060,8880,6235,/ 8160,6660,8160,6060,9400,7005**

su 154,111 (XY plot - value per grid division)

XY Plot Element

PURPOSE:

The XY plot (value per grid division) command presents a value field to identify the value per grid division.

The quantity will be calculated by:

(x-axis high limit - x-axis low limit) × number x-axis grid divisions

*- **or** -*

(y-axis high limit - y-axis low limit) × number of y-axis grid divisions

COMMAND:

su 154,111,*element,plot,axisopt,x1-coord,y1-coord,x2-coord, y2- coord*

Parameter	Description
element	Element number used to associate this command with an XY plot element (**et 154** command).
plot	Index number of a plot definition. Identifies the plotted variables used in the element. A valid entry is from 1 to 80. Refer to the discussion on XY plot definition in the ***Configuration*** instruction for additional information (Table 1-2 lists instruction numbers).
axisopt	1 - x-axis divisions. 2 - y-axis divisions.
x1-coord,y1-coord	Position of the calculated value per grid division field.
x2-coord,y2-coord	Position of the engineering unit descriptor associated with the value per grid division quantity.

su 154,112 (XY plot - plot descriptor)

XY Plot Element

PURPOSE:

The XY plot (plot descriptor) command defines the position, size, and color of the plot title and legend text strings. These strings are defined during plot definition. Refer to the discussion on XY plot definition in the instruction for further explanation (Table 1-2 lists instruction numbers).

COMMAND:

su 154,112,*element,type,x-coord,y-coord,charsize,fgcolor,bgcolor,spacing,charlength,startchar,***1**

Parameter	Description
element	Element number used to associate this command with an XY plot element (**et 154** command).
type	1 - title. 2 - x-axis legend. 3 - y-axis legend.
1	Required.

su 154,114 (XY plot - reference line value)

XY Plot Element

PURPOSE:

The XY plot (reference line value) command displays the value set for an x-reference line or y-reference line of an MFC data source plot. The command acquires the value from the MFC data file used in the plot. Maximum of ten of these commands can be used in a single plot element. The parameters in the data file this escape references are:

```
float     x_refline[MAX_REFLINES];
float     y_refline[MAX_REFLINES];
```

COMMAND:

su 154,114,*element,plot,refline,axis,x-coord,y-coord,charlength, decdigits,bgcolor,fgcolor*

Parameter	Description
element	Element number used to associate this command with an XY plot element (**et 154** command).
plot	Identifies the plotted variables used in the element by plot index number. A valid entry is from 1 to 80. Refer to the discussion on XY plot definition in the ***Configuration*** instruction for additional information (Table 1-2 lists instruction numbers).
refline	Reference line number from 1 to 5.
axis	1 - x-axis. 2 - y-axis.

DISCUSSION:

The following are specific to reference lines:

1. The x_refline is for a horizontally drawn reference line. The y_refline is for a vertically drawn reference line.

2. An alarm bar is always drawn from an x or y point of origin to reference line zero.

Example:

```
rm ------xref values--------------------
su 154,114,1,13,2,1,8150,6050,5,2,0,1
su 154,114,1,13,3,1,8150,6275,5,2,0,1
su 154,114,1,13,4,1,8925,6675,5,2,0,1
su 154,114,1,13,5,1,8925,5650,5,2,0,2
rm ------yref values--------------------
su 154,114,1,13,1,2,8150,6475,4,0,0,1
su 154,114,1,13,2,2,8150,6675,5,2,0,1
su 154,114,1,13,3,2,8150,5650,5,2,0,1
su 154,114,1,13,4,2,8150,5850,3,0,0,1
```

tc (text color)

Graphic Attribute

PURPOSE: The text color command specifies the color of the text that follows. The text color command must precede the **tx** command.

COMMAND: **tc** *color*

Parameter	Description
color	Refer to Table 3-2 for color index numbers.

Example: **tc 3**

tx (text)

Graphic Primitive

PURPOSE: The text command enters a text string of a maximum of 69 characters. A **tc**, **bc**, **ch**, and **cs** command can be used to define the height and spacing of the characters. If a character string exceeds the 69 character maximum, use the **at** command to continue the string and append a maximum of 69 additional characters.

COMMAND: **tx** *flag,x-coord,y-coord,string~*

Parameter	Description
flag	0 - normal text string. 1 - to append the following **at** command text.
x-coord,y-coord	Starting point of the string.
string	0 to 69 characters followed by a tilde (~).

Example: **tx 0,2250,5900,A~**

%% (end of input)

File Delimiter

PURPOSE: The end of input characters mark the end of a display and symbol file.

COMMAND: **%%**

APPENDIX A - EXAMPLE SOURCE FILES

INTRODUCTION

This appendix provides some examples of display and symbol source files. A display file contains all of the information necessary to create a complete display. In most cases it references separate symbol files for parts of the display. A symbol file contains only the information needed to define one complete element or piece of a display.

VALVE SYMBOL

```
bp 1,valveup~,0
bb
rm Beginning of emitted code~
rf 5000,4000
lw 1
lc 4
pl 4799,4102;0,-200;400,200;0,-200;-400,200~
pl 4999,4252;0,-250~
pl 4849,4252;300,0~
rm ***END*** of emitted code~
ep
%%
```

ANALOG ELEMENT

```
bp 1,analog1~,0
bb
rm Beginning of emitted code~
rf 1000,1000
fc 1
lc 1
tc 1
lw 1
lc 4
pl 999,1002;2180,0;0,1580;-2180,0;0,-1580~
ec 34,32,1,1439,2396,124,5,0,1,14,0
ec 35,32,1,1342,2256,124,5,0,1,16,0
ec 35,32,1,1342,2116,124,5,0,1,16,16
ed 42,32,1,1489,1512,124,3,0,7,1,6,2,0
ec 38,32,1,2109,1512,124,5,0,1
ea 56,32,1,1099,1065,124,7,0,7,1
rm ***END*** of emitted code~
ep
%%
```

DIGITAL CONTROL STATION ELEMENT

```
bp 1,DCSFULL2~,0
bb
rm Beginning of emitted code~
rf 1000,1000
fc 1
lc 1
tc 1
lw 1
lc 5
pl 1799,3402;100,0~
pl 1799,3262;50,0~
pl 1799,3122;50,0~
pl 1799,2982;50,0~
pl 1799,2842;50,0~
pl 1799,2702;75,0~
pl 1799,2562;50,0~
pl 1799,2422;50,0~
pl 1799,2282;50,0~
pl 1799,2142;50,0~
pl 1799,2002;100,0~
pl 1239,1652;0,100~
pl 1409,1652;0,50~
pl 1579,1652;0,50~
pl 1749,1652;0,50~
pl 1919,1652;0,50~
pl 2089,1652;0,75~
pl 2259,1652;0,50~
pl 2429,1652;0,50~
pl 2599,1652;0,50~
pl 2769,1652;0,50~
pl 2939,1652;0,100~
lc 4
pl 999,1002;2180,0;0,3256;-2180,0;0,-3256~
ec 34,32,1,1439,4056,124,5,0,1,14,0
ec 35,32,1,1342,3916,124,5,0,1,16,0
ec 35,32,1,1342,3756,124,5,0,1,16,16
ec 38,32,1,1074,3502,124,5,0,1
ec 41,39,1,1669,2002,50,5,0,1400
ec 40,39,1,2569,1852,124,5,0,1,6,2,0,1700
ed 49,39,1,1029,2002,124,3,0,7,1,6,2,0,1400
ed 49,39,1,1974,2002,124,3,0,3,1,6,2,1,1400
ed 51,41,1,1874,2002,100,3,0,3,1,1400
ed 50,39,1,1714,2002,40,3,0,7,0,1400
ed 50,40,1,1239,1567,40,3,0,3,2,1700
ed 74,32,1,1869,1202,124,3,0,1
ed 75,32,1,2569,1202,124,3,0,1
ed 76,32,1,1249,1202,124,3,0,1
ed 49,40,1,1249,1402,124,3,0,3,1,4,1,2,1700
ea 56,32,1,1099,1065,124,7,0,7,1
ec 39,39,1,2569,2002,124,5,0,1,6,2,1400
bc 1,4
```

```
tc 5
ch 124
cs 20
tx 0,2989,1637,%~
ed 100,32,1,1020,3680,124,3,0,2,1,2,0
rm ***END*** of emitted code~
ep
%%
```

MULTI-STATE DEVICE DRIVER ELEMENT

```
bp 1,MSDEVDR1~,0
bb
rm Beginning of emitted code~
rf 1000,1000
fc 1
lc 1
tc 1
lw 1
lc 4
pl 999,1002;2180,0;0,1580;-2180,0;0,-1580~
ec 37,48,1,1289,1907,124,5,0,0,1
ec 37,47,1,1289,1737,124,5,0,0,1
ec 37,34,1,1289,1567,124,5,0,1
ec 37,33,1,1289,1397,124,5,0,1
ed 61,48,1,1899,1907,124,3,0,7
ed 61,47,1,1899,1737,124,3,0,7
ed 61,34,1,1899,1567,124,3,0,7
ed 61,33,1,1899,1397,124,3,0,7
ed 59,33,1,2279,1907,124,3,0,7,1
ed 59,34,1,2279,1737,124,3,0,7,1
ed 59,47,1,2279,1567,124,3,0,7,1
ed 59,48,1,2279,1397,124,3,0,7,1
ed 60,32,1,1719,1227,124,3,0,1
ed 58,32,1,2799,1227,124,3,0,1
ec 34,32,1,1439,2396,124,5,0,1,14,0
ec 35,32,1,1342,2256,124,5,0,1,16,0
ec 35,32,1,1342,2116,124,5,0,1,16,16
ea 56,32,1,1099,1065,124,7,0,7,1
ed 100,32,1,1025,1975,124,3,0,2,1,2,0
rm ***END*** of emitted code~
ep
%%
```

ALARM SUMMARY DISPLAY

```
bm 0,almsum~
bp 0,almsum~,0
sm 1
bb
as 82,32,0,1,D,32,0,400,400,4,0,0
ei 108,87,83,0,400,400
ei 107,87,400,6650,9600,7200,400,400
```

```
ei 108,88,65,0
ei 108,88,66,0
ei 108,88,67,0
ei 108,88,68,0
ei 108,88,69,0
ei 108,88,70,0
ei 108,88,71,0
ei 108,88,72,0
ei 108,88,73,0
ei 108,88,74,0
ei 108,88,75,0
ei 108,88,76,0
ei 108,88,77,0
ei 108,88,78,0
ei 108,88,79,0
ei 108,88,80,0
ei 107,88,400,6294,9600,6641
ei 107,88,400,5946,9600,6293
ei 107,88,400,5598,9600,5945
ei 107,88,400,5250,9600,5597
ei 107,88,400,4728,9600,5075
ei 107,88,400,4380,9600,4727
ei 107,88,400,4032,9600,4379
ei 107,88,400,3684,9600,4031
ei 107,88,400,3162,9600,3509
ei 107,88,400,2814,9600,3161
ei 107,88,400,2466,9600,2813
ei 107,88,400,2118,9600,2465
ei 107,88,400,1596,9600,1943
ei 107,88,400,1248,9600,1595
ei 107,88,400,900,9600,1247
ei 107,88,400,552,9600,899
ch 124
cs 01
lc 4
fc 0
lt 0
pl 400,400,9200,0~
pl 400,400,0,6800~
pl 400,7200,9200,0~
pl 9600,400,0,6800~
bc 0,0
tc 2
tx 0,550,6490,A~
tx 0,550,6142,B~
tx 0,550,5794,C~
tx 0,550,5446,D~
tx 0,550,4924,E~
tx 0,550,4576,F~
tx 0,550,4228,G~
tx 0,550,3880,H~
tx 0,550,3358,I~
tx 0,550,3010,J~
tx 0,550,2662,K~
```

```
tx 0,550,2314,L~
tx 0,550,1792,M~
tx 0,550,1444,N~
tx 0,550,1096,O~
tx 0,550,748,P~
tc 5
tx 0,4000,6838,ALARM SUMMARY~
ep
em
%%
%%
```

STANDARD TREND DISPLAY

```
bm 0,TREND1~
vd MAXTAGS=5~
vd MAXTREL=1~
bp 0,TREND~,0
sm 1,1
bb
rm Default setup values~
is 0,1
ch 124
cs 1
tc 1
tx 0,3000,7350,TREND~
rm Beginning of emitted code~
et 53,40,1,33,5,32,450,800,9570,7200,4
ei 108,86,65,0,1,2,100.0000,0.0000
ei 107,86,7390,5920,9570,7200,1,2,100.0000,0.0000
ei 108,86,66,0,2,3,100.0000,0.0000
ei 107,86,7390,4640,9570,5920,2,3,100.0000,0.0000
ei 108,86,67,0,3,6,100.0000,0.0000
ei 107,86,7390,3360,9570,4640,3,6,100.0000,0.0000
ei 108,86,68,0,4,7,100.0000,0.0000
ei 107,86,7390,2080,9570,3360,4,7,100.0000,0.0000
ei 108,86,69,0,5,8,100.0000,0.0000
ei 107,86,7390,800,9570,2080,5,8,100.0000,0.0000
es TRNDPVFL~,4,7390,5920,1
tc 2
ch 124
cs 20
tx 0,7420,7000,A ~
es TRNDPVFL~,4,7390,4640,2
tc 3
ch 124
cs 20
tx 0,7420,5720,B ~
es TRNDPVFL~,4,7390,3360,3
tc 6
ch 124
cs 20
tx 0,7420,4440,C ~
```

```
es TRNDPVFL~,4,7390,2080,4
tc 7
ch 124
cs 20
tx 0,7420,3160,D ~
es TRNDDIFL~,4,7390,800,5
tc 8
ch 124
cs 20
tx 0,7420,1880,E ~
rm ***END*** of emitted code~
ep
em
%%
```

CUSTOM TREND DISPLAY

```
bm 0,CUS1000~
bp 0,ZK~,0
bb
ch 124
cs 01
tc 5
is 1,0
fc 37
rm rt 400,400,9600,7200~
tx 0,3000,7350,CUSTOM TREND TEST 9~
rm ---
rm --- DISTRIBUTED TREND ELEMENT WITH 5 TRENDS~
rm ---
et 153,32,1,2,32,5,400,4800,9600,7000,/
4,480,32,0,400,4800,9600,7000,1,0,13,10,0,240,120~
su 153,109,1,7,0,7000,4300~
su 153,108,1,7,0,7000,4100,7,0~
su 153,107,1,7,0,30,120,3,1~
rm --- SELECTORS
ei 108,107,48,54,1,400~
ei 108,107,48,55,1,401~
ei 108,107,48,56,1,402~
ei 108,107,48,57,1,403~
ei 108,107,48,58,1,404~
rm --- INDIVIDUAL TREND MORE INFO~
su 153,110,1,400,2,1,1.0,-1.0,2,0,/
1000,4500,1000,4100,2,0,1000,4300,0,1~
su 153,110,1,401,3,1,2.0,-2.0,3,0,/
2000,4500,2000,4100,3,0,2000,4300,0,1~
su 153,110,1,402,1,1,3.0,-3.0,1,0,/
3000,4500,3000,4100,1,0,3000,4300,0,1~
su 153,110,1,403,6,1,4.0,-4.0,6,0,/
4000,4500,4000,4100,6,0,4000,4300,0,1~
su 153,110,1,404,7,1,5.0,-5.0,7,0,/
5000,4500,5000,4100,7,0,5000,4300,0,1~
```

```
rm ---
rm ---OP. ASSIGNABLE TREND ELEMENT WITH 5 TRENDS~
rm ---
et 153,33,2,2,32,5,400,1300,9600,3500,/
4,480,32,0,400,1300,9600,3500,1,0,13,10,0,240,120~
su 153,109,2,7,0,7000,800~
su 153,108,2,7,0,7000,600,7,0~
su 153,107,2,7,0,30,120,3,1~
rm ---SELECTORS
ei 108,107,48,49,2,7~
ei 108,107,48,50,2,8~
ei 108,107,48,51,2,9~
ei 108,107,48,52,2,10~
ei 108,107,48,53,2,11~
rm ---INDIVIDUAL TREND MORE INFO~
su 153,110,2,7,2,1,1.0,-1.0,2,0,/
1000,1000,1000,600,2,0,1000,800,0,1~
su 153,110,2,8,3,1,2.0,-2.0,3,0,/
2000,1000,2000,600,3,0,2000,800,0,1~
su 153,110,2,9,1,1,3.0,-3.0,1,0,/
3000,1000,3000,600,1,0,3000,800,0,1~
su 153,110,2,10,6,1,4.0,-4.0,6,0,/
4000,1000,4000,600,6,0,4000,800,0,1~
su 153,110,2,11,7,1,5.0,-5.0,7,0,/
5000,1000,5000,600,7,0,5000,800,0,1~
rm
ep
em
%%
```

TABULAR TREND DISPLAY

```
bm 0,crtlog~
bp 0,digtrend~
bb
rm -- Selector characters for trend elements 1 thru 10
tc 2
tx 0,1186,6445,A~
tx 0,2022,6445,B~
tx 0,2858,6445,C~
tx 0,3694,6445,D~
tx 0,4530,6445,E~
tx 0,5366,6445,F~
tx 0,6202,6445,G~
tx 0,7038,6445,H~
tx 0,7874,6445,I~
tx 0,8710,6445,J~
rm -- Tag names for trend elements 1 thru 10
ec 34,32,101,1376,6445,124,4,0,1,6,0
ec 34,32,102,2212,6445,124,4,0,1,6,0
ec 34,32,103,3048,6445,124,4,0,1,6,0
ec 34,32,104,3884,6445,124,4,0,1,6,0
ec 34,32,105,4720,6445,124,4,0,1,6,0
```

```
ec 34,32,106,5556,6445,124,4,0,1,6,0
ec 34,32,107,6392,6445,124,4,0,1,6,0
ec 34,32,108,7228,6445,124,4,0,1,6,0
ec 34,32,109,8054,6445,124,4,0,1,6,0
ec 34,32,110,8900,6445,124,4,0,1,6,0
rm -- Engineering units for trend elements 1 thru 10
ec 38,32,101,1186,6290,124,4,0,1
ec 38,32,102,2022,6290,124,4,0,1
ec 38,32,103,2858,6290,124,4,0,1
ec 38,32,104,3694,6290,124,4,0,1
ec 38,32,105,4530,6290,124,4,0,1
ec 38,32,106,5366,6290,124,4,0,1
ec 38,32,107,6202,6290,124,4,0,1
ec 38,32,108,7038,6290,124,4,0,1
ec 38,32,109,7874,6290,124,4,0,1
ec 38,32,110,8710,6290,124,4,0,1
rm -- Tabular trend element
lc 4
pl 400,400,0,6200,9200,0,0,-6200,-9200,0~
et 52,32,1,1,33,10,400,400,9600,6600,4,30,1,2,6290,450
rm -- Tabular trend column 1 (tag 101)
ei 108,97,65,0,1,1
ei 107,97,1186,6290,1950,6490,1,1
su 152,110,1,1,1186,8,2,0,3,60.0,0.0
rm -- Tabular trend column 2 (tag 102)
ei 108,97,66,0,1,2
ei 107,97,2022,6290,2822,6490,1,2
su 152,110,1,2,2022,82,0,3,60.0,0.0
rm -- Tabular trend column 3 (tag 103)
ei 108,97,67,0,1,3
ei 107,97,2858,6290,3658,6490,1,3
su 152,110,1,3,2858,8,2,0,3,60.0,0.0
rm -- Tabular trend column 4 (tag 104)
ei 108,97,68,0,1,4
ei 107,97,3694,6290,4494,6490,1,4
su 152,110,1,4,3694,8,2,0,3,60.0,0.0
rm -- Tabular trend column 5 (tag 105)
ei 108,97,69,0,1,5
ei 107,97,4530,6290,6330,6490,1,5
su 152,110,1,5,4530,8,2,0,3,60.0,0.0
rm -- Tabular trend column 6 (tag 106)
ei 108,97,70,0,1,6
ei 107,97,5366,6290,6166,6490,1,6
su 152,110,1,6,5366,8,2,0,3,60.0,0.0
rm -- Tabular trend column 7 (tag 107)
ei 108,97,71,0,1,7
ei 107,97,6202,6290,7002,6490,1,7
su 152,110,1,7,6202,8,2,0,3,60.0,0.0
rm -- Tabular trend column 8 (tag 108)
ei 108,97,72,0,1,8
ei 107,97,7038,6290,7838,6490,1,8
su 152,110,1,8,7038,8,2,0,3,60.0,0.0
```

```
rm -- Tabular trend column 9 (tag 109)
ei 108,97,73,0,1,9
ei 107,97,7874,6290,8674,6490,1,9
su 152,110,1,9,7874,8,2,0,3,60.0,0.0
rm -- Tabular trend column 10 (tag 110)
ei 108,97,74,0,1,10
ei 107,97,8710,6290,9510,6490,1,10
su 152,110,1,10,8710,8,2,0,3,60.0,0.0
rm -- Page summary
su 152,102,1,1330
su 152,101,1,1175
su 152,104,1,865
su 152,103,1,555
rm -- Summary headings
tc 4
tx 0,450,1330,LLim:~
tx 0,450,1175,HLim:~
tx 0,450,1015,Min.:~
tx 0,450,865,Time:~
tx 0,450,705,Max.:~
tx 0,450,555,Time:~
rm
ep
em
%%
```

TAG OR TREND SOURCE XY PLOT DISPLAY

```
bm 0,XYpfl5~
bp 0,XYpfl5~,0
sm 1
bb
ch 124
cs 1
rm -- XY plot symbols for plot pairs 1 thru 5
es XYAHF~,1,7420,6600,1~
es XYAHF~,1,7420,6000,1~
es XYAHF~,1,7420,5400,145~
es XYAHF~,1,7420,4800,144~
es XYAHF~,1,7420,4200,13~
es XYAHF~,1,7420,3600,14~
es XYAHF~,1,7420,3000,8~
es XYAHF~,1,7420,2400,9~
es XYAHF~,1,7420,1800,140~
es XYAHF~,1,7420,1200,146~
rm -- Plot selector characters
tc 2
tx 0,7450,7005,A~
tc 3
tx 0,7450,5805,B~
tc 6
tx 0,7450,4605,C~
tc 7
```

```
tx 0,7450,3405,D~
tc 8
tx 0,7450,2205,E~
rm-XY plot element
et 154,32,1,5,7420,1200,9600,7200,500,1200,7420,7200,4,1,10/
10,7500,1000,7500,800,0
rm -- Interactive control for plots 1 thru 5
ei 108,96,65,0,1,1~
ei 108,96,66,0,1,3~
ei 108,96,67,0,1,2~
ei 108,96,68,0,1,4~
ei 108,96,69,0,1,5~
rm -- Summary information for plots 1 thru 5
su 154,110,1,1,2,8880,6660,8880,6835,8880,6060,8880,6235,8160/
6660,8160,6060,9400,7005~
su 154,110,1,3,3,8880,5460,8880,5635,8880,4860,8880,5035/
8160,5460,8160,4860,9400,5805~
su 154,110,1,2,6,8880,4260,8880,4435,8880,3660,8880,3835/
8160,4260,8160,3660,9400,4605~
su 154,110,1,4,7,8880,3060,8880,3235,8880,2460,8880,2635/
8160,3060,8160,2460,9400,3405~
su 154,110,1,5,8,8880,1860,8880,2035,8880,1260,8880,1435/
8160,1860,8160,1260,9400,2205~
ep
em
%%
```

MFC DATA SOURCE XY PLOT ELEMENT

```
rm *** Beginning XY Plot #1~
rm ***~
et 154,32,1,1,400,5500,8100,7000,400,5500,8100,7000,4,1,16,6/
0,0,4943,7050,1
su 154,112,1,1,950,7050,1,5,0,20,5,1,1
rm start of XY Plot - trace #1~
su 154,110,1,13,1,0,0,0,0,8125,5250,8125,7050,0,0,0,0,9325,7050
es XYSYM2~,1,400,5225,1
ei 108,96,65,0,1,13
rm ------xref values--------------------
su 154,114,1,13,2,1,8150,6050,5,2,0,1
su 154,114,1,13,3,1,8150,6275,5,2,0,1
su 154,114,1,13,4,1,8925,6675,5,2,0,1
su 154,114,1,13,5,1,8925,5650,5,2,0,2
rm ------yref values--------------------
su 154,114,1,13,1,2,8150,6475,4,0,0,1
su 154,114,1,13,2,2,8150,6675,5,2,0,1
su 154,114,1,13,3,2,8150,5650,5,2,0,1
su 154,114,1,13,4,2,8150,5850,3,0,0,1
ch 124
cs 20
tx 0,525,7025,A~
ei 107,96,400,5500,8100,7000,1,13
lw 0
```

```
fc 0
lc 6
pg 400,5500;0,1500;7700,0;0,-1500;-7700,0~
rm end of XY Plot trace #1~
```

SYSTEM STATUS OVERVIEW DISPLAY

```
bm 0,N90STAT1~
vd MAXTAGS=0~
bp 0,N90STAT1~,0
sm 1,1
bb
rm Default setup values~
is 0,1
ch 124
cs 1
tc 1
tx 0,3000,7350,N90STAT1~
rm Beginning of emitted code~
lw 1
lc 4
pl 400,7185;9200,0;0,-6800;-9200,0;0,6800~
bc 1,4
tc 5
ch 124
cs 1
tx 0,4200,7000,System Status~
tx 0,6800,2000,O = Node Offline~
tx 0,6800,1800,M = Module Errors~
tx 0,6800,1600,C = Plant Comm. Problem~
tx 0,6800,1400,S = Node Status Problem~
tx 0,500,6800,01~
tx 0,500,6600,02~
tx 0,500,6400,03~
tx 0,500,6200,04~
tx 0,500,6000,05~
tx 0,500,5600,06~
tx 0,500,5400,07~
tx 0,500,5200,08~
tx 0,500,5000,09~
tx 0,500,4800,10~
tx 0,500,4400,11~
tx 0,500,4200,12~
tx 0,500,4000,13~
tx 0,500,3800,14~
tx 0,500,3600,15~
tx 0,500,3200,16~
tx 0,500,3000,17~
tx 0,500,2800,18~
tx 0,500,2600,19~
tx 0,500,2400,20~
tx 0,500,2000,21~
tx 0,500,1800,22~
```

```
tx 0,500,1600,23~
tx 0,500,1400,24~
tx 0,500,1200,25~
tx 0,3600,6800,26~
tx 0,3600,6600,27~
tx 0,3600,6400,28~
tx 0,3600,6200,29~
tx 0,3600,6000,30~
tx 0,3600,5600,31~
tx 0,3600,5400,32~
tx 0,3600,5200,33~
tx 0,3600,5000,34~
tx 0,3600,4800,35~
tx 0,3600,4400,36~
tx 0,3600,4200,37~
tx 0,3600,4000,38~
tx 0,3600,3800,39~
tx 0,3600,3600,40~
tx 0,3600,3200,41~
tx 0,3600,3000,42~
tx 0,3600,2800,43~
tx 0,3600,2600,44~
tx 0,3600,2400,45~
tx 0,3600,2000,46~
tx 0,3600,1800,47~
tx 0,3600,1600,48~
tx 0,3600,1400,49~
tx 0,3600,1200,50~
tx 0,6600,6800,51~
tx 0,6600,6600,52~
tx 0,6600,6400,53~
tx 0,6600,6200,54~
tx 0,6600,6000,55~
tx 0,6600,5600,56~
tx 0,6600,5400,57~
tx 0,6600,5200,58~
tx 0,6600,5000,59~
tx 0,6600,4800,60~
tx 0,6600,4400,61~
tx 0,6600,4200,62~
tx 0,6600,4000,63~
es NODLINE~,1,900,6800,1
es NODLINE~,1,900,6600,1
es NODLINE~,1,900,6400,1
es NODLINE~,1,900,6200,1
es NODLINE~,1,900,6000,1
es NODLINE~,1,900,5600,1
es NODLINE~,1,900,5400,1
es NODLINE~,1,900,5200,1
es NODLINE~,1,900,5000,1
es NODLINE~,1,900,4800,1
es NODLINE~,1,900,4400,1
es NODLINE~,1,900,4200,1
es NODLINE~,1,900,4000,1
```

```
es NODLINE~,1,900,3800,1
es NODLINE~,1,900,3600,1
es NODLINE~,1,900,3200,1
es NODLINE~,1,900,3000,1
es NODLINE~,1,900,2800,1
es NODLINE~,1,900,2600,1
es NODLINE~,1,900,2400,1
es NODLINE~,1,900,2000,1
es NODLINE~,1,900,1800,1
es NODLINE~,1,900,1600,1
es NODLINE~,1,900,1400,1
es NODLINE~,1,900,1200,1
es NODLINE~,1,4000,6800,1
es NODLINE~,1,4000,6600,1
es NODLINE~,1,4000,6400,1
es NODLINE~,1,4000,6200,1
es NODLINE~,1,4000,6000,1
es NODLINE~,1,4000,5600,1
es NODLINE~,1,4000,5400,1
es NODLINE~,1,4000,5200,1
es NODLINE~,1,4000,5000,1
es NODLINE~,1,4000,4800,1
es NODLINE~,1,4000,4400,1
es NODLINE~,1,4000,4200,1
es NODLINE~,1,4000,4000,1
es NODLINE~,1,4000,3800,1
es NODLINE~,1,4000,3600,1
es NODLINE~,1,4000,3200,1
es NODLINE~,1,4000,3000,1
es NODLINE~,1,4000,2800,1
es NODLINE~,1,4000,2600,1
es NODLINE~,1,4000,2400,1
es NODLINE~,1,4000,2000,1
es NODLINE~,1,4000,1800,1
es NODLINE~,1,4000,1600,1
es NODLINE~,1,4000,1400,1
es NODLINE~,1,4000,1200,1
es NODLINE~,1,7000,6800,1
es NODLINE~,1,7000,6600,1
es NODLINE~,1,7000,6400,1
es NODLINE~,1,7000,6200,1
es NODLINE~,1,7000,6000,1
es NODLINE~,1,7000,5600,1
es NODLINE~,1,7000,5400,1
es NODLINE~,1,7000,5200,1
es NODLINE~,1,7000,5000,1
es NODLINE~,1,7000,4800,1
es NODLINE~,1,7000,4400,1
es NODLINE~,1,7000,4200,1
es NODLINE~,1,7000,4000,1
ei 108,82,48,49,NODSTA01~
ei 108,82,48,50,NODSTA02~
ei 108,82,48,51,NODSTA03~
ei 108,82,48,52,NODSTA04~
```

```
ei 108,82,48,53,NODSTA05~
ei 108,82,48,54,NODSTA06~
ei 108,82,48,55,NODSTA07~
ei 108,82,48,56,NODSTA08~
ei 108,82,48,57,NODSTA09~
ei 108,82,49,48,NODSTA10~
ei 108,82,49,49,NODSTA11~
ei 108,82,49,50,NODSTA12~
ei 108,82,49,51,NODSTA13~
ei 108,82,49,52,NODSTA14~
ei 108,82,49,53,NODSTA15~
ei 108,82,49,54,NODSTA16~
ei 108,82,49,55,NODSTA17~
ei 108,82,49,56,NODSTA18~
ei 108,82,49,57,NODSTA19~
ei 108,82,50,48,NODSTA20~
ei 108,82,50,49,NODSTA21~
ei 108,82,50,50,NODSTA22~
ei 108,82,50,51,NODSTA23~
ei 108,82,50,52,NODSTA24~
ei 108,82,50,53,NODSTA25~
ei 108,82,50,54,NODSTA26~
ei 108,82,50,55,NODSTA27~
ei 108,82,50,56,NODSTA28~
ei 108,82,50,57,NODSTA29~
ei 108,82,51,48,NODSTA30~
ei 108,82,51,49,NODSTA31~
ei 108,82,51,50,NODSTA32~
ei 108,82,51,51,NODSTA33~
ei 108,82,51,52,NODSTA34~
ei 108,82,51,53,NODSTA35~
ei 108,82,51,54,NODSTA36~
ei 108,82,51,55,NODSTA37~
ei 108,82,51,56,NODSTA38~
ei 108,82,51,57,NODSTA39~
ei 108,82,52,48,NODSTA40~
ei 108,82,52,49,NODSTA41~
ei 108,82,52,50,NODSTA42~
ei 108,82,52,51,NODSTA43~
ei 108,82,52,52,NODSTA44~
ei 108,82,52,53,NODSTA45~
ei 108,82,52,54,NODSTA46~
ei 108,82,52,55,NODSTA47~
ei 108,82,52,56,NODSTA48~
ei 108,82,52,57,NODSTA49~
ei 108,82,53,48,NODSTA50~
ei 108,82,53,49,NODSTA51~
ei 108,82,53,50,NODSTA52~
ei 108,82,53,51,NODSTA53~
ei 108,82,53,52,NODSTA54~
ei 108,82,53,53,NODSTA55~
ei 108,82,53,54,NODSTA56~
ei 108,82,53,55,NODSTA57~
ei 108,82,53,56,NODSTA58~
```

```
ei 108,82,53,57,NODSTA59~
ei 108,82,54,48,NODSTA60~
ei 108,82,54,49,NODSTA61~
ei 108,82,54,50,NODSTA62~
ei 108,82,54,51,NODSTA63~
rm ***END*** of emitted code~
ep
em
%%
```

APPENDIX B - OPERATOR KEYBOARD KEY CODES

INTRODUCTION

This appendix provides the numeric key codes that are required by the **ei 107,115** touch point select display escape command. All the keycodes contained in this appendix related to keys found either on the standard operator keyboard, the auxiliary engineering keyboard, or in the touchpad key palette. The QWERTY Key-Map column lists the necessary key strokes when using a standard QWERTY style keyboard.

KEYCODE TABLE

Table B-1. Key Code Descriptions

Key Label	QWERTY Key-Map	Decimal Code	Description
Alphabetic Character Keys			
A	Shift - a	32833	Uppercase A
B	Shift - b	32834	Uppercase B
C	Shift - c	32835	Uppercase C
D	Shift - d	32836	Uppercase D
E	Shift - e	32837	Uppercase E
F	Shift - f	32838	Uppercase F
G	Shift - g	32839	Uppercase G
H	Shift - h	32840	Uppercase H
I	Shift - i	32841	Uppercase I
J	Shift - j	32842	Uppercase J
K	Shift - k	32843	Uppercase K
L	Shift - l	32844	Uppercase L
M	Shift - m	32845	Uppercase M
N	Shift - n	32846	Uppercase N
O	Shift - o	32847	Uppercase O
P	Shift - p	32848	Uppercase P
Q	Shift - q	32849	Uppercase Q
R	Shift - r	32850	Uppercase R
S	Shift - s	32851	Uppercase S
T	Shift - t	32852	Uppercase T
U	Shift - u	32853	Uppercase U
V	Shift - v	32854	Uppercase V
W	Shift - w	32855	Uppercase W
X	Shift - x	32856	Uppercase X
Y	Shift - y	32857	Uppercase Y

Table B-1. Key Code Descriptions (continued)

Key Label	QWERTY Key-Map	Decimal Code	Description
Z	Shift - z	32858	Uppercase Z
a	a	32865	Lowercase A
b	b	32866	Lowercase B
c	c	32867	Lowercase C
d	d	32868	Lowercase D
e	e	32869	Lowercase E
f	f	32870	Lowercase F
g	g	32871	Lowercase G
h	h	32872	Lowercase H
i	i	32873	Lowercase I
j	j	32874	Lowercase J
k	k	32875	Lowercase K
l	l	32876	Lowercase L
m	m	32877	Lowercase M
n	n	32878	Lowercase N
o	o	32879	Lowercase O
p	p	32880	Lowercase P
q	q	32881	Lowercase Q
r	r	32882	Lowercase R
s	s	32883	Lowercase S
t	t	32884	Lowercase T
u	u	32885	Lowercase U
v	v	32886	Lowercase V
w	w	32887	Lowercase W
x	x	32888	Lowercase X
y	y	32889	Lowercase Y
z	z	32890	Lowercase Z
Shift	Shift	33630	Shift to uppercase
Shft Lock	Caps Lock	33775	Lock into uppercase
Space	Space Bar	32800	Space
Cursor and Trend Control Keys			
Double-up Arrow	Alt - up arrow	33699	Move up one input field on a configuration screen. Also used to zoom out on trend displays.
Pan	F13	33700	Pan to user specified time on a trend display.
Zoom	F14	33701	Zoom to user specified factor on a trend display.
Up Arrow	Up arrow	33715	Scroll up N line(s) in Display Log function.
Double-left Arrow	Alt - left arrow	33729	Move left one input field on a configuration screen. Also used to pan back on trend displays.
Left Arrow	Left arrow	33730	Move left one character in an input field. Also used to move time cursor backward on trend display.
Home	Alt - /	33731	Move to first page or “home” position.

Table B-1. Key Code Descriptions (continued)

Key Label	QWERTY Key-Map	Decimal Code	Description
Right Arrow	Right arrow	33732	Move right one character in an input field. Also used to move time cursor forwards on trend displays.
Double-right Arrow	Alt - right arrow	33733	Move right one input field on a configuration screen. Also used to pan forwards on trend displays.
Tab Back	Alt - Tab	33745	Move backwards one input field on a configuration screen.
Down Arrow	Down arrow	33747	Scroll down N line(s) in Display Log function.
Tab	Tab	33761	Move forwards one input field on a configuration screen.
Cursor	F11	33697	Toggle trackball cursor on and off.
Double-down Arrow	Alt - down arrow	33763	Move down one input field on a configuration screen. Also used to zoom in on trend displays.
Cntrl select	Alt - .	33765	Control select function.
Numeric Keys			
0	0	32816	Zero digit.
1	1	32817	One digit.
2	2	32818	Two digit.
3	3	32819	Three digit.
4	4	32820	Four digit.
5	5	32821	Five digit.
6	6	32822	Six digit.
7	7	32823	Seven digit.
8	8	32824	Eight digit.
9	9	32825	Nine digit.
/	/	32815	Slash.
*	Shift - 8	32810	Asterisk.
+	Shift - =	32811	Plus.
.	.	32814	Period.
=	=	32829	Equals.
-	-	32813	Minus.
Enter	Return	33659	Enter.
Clear	Delete (Backspace)	33661	Clear field.
Esc	F20	33663	Escape from field or screen.
&	Shift - 7	32806	Ampersand.
;	;	32827	Semicolon.
:	Shift - ;	32826	Colon.
?	Shift - /	32831	Question mark.
$	Shift - 4	32804	Dollar sign.
%	Shift - 5	32805	Percent sign.
“	Shift - ‘	32802	Double quote.
,	,	32812	Comma.

Table B-1. Key Code Descriptions (continued)

Key Label	QWERTY Key-Map	Decimal Code	Description
(	Shift - 9	32808	Open parenthesis.
)	Shift - 0	32809	Close parenthesis.
<	<	32828	Less than sign.
>	Shift - <	32830	Greater than sign.
Control Keys			
Double-up Arrow	Alt - up arrow	33707	Ramp target value up by 4.0%.
Set	SET	33703	Set target value.
Cmptr/Local	Ctrl - PF3	33719	Toggle and COMPUTER and LOCAL mode.
Solid Box	Ctrl - PF4	33706	Change to ON state.
Up Arrow	Ctrl - KP7	33708	Ramp target value up by 0.2%.
Out	Ctrl - KP8	33704	Set control output.
Ratio/Basic	Ctrl - KP9	33736	Toggle between RATIO and BASIC mode.
Half Box	Ctrl - KP-	33738	Change to MID state.
Down Arrow	Ctrl - KP4	33709	Ramp target value down by 0.2%.
Casc/Basic	Ctrl - KP6	33735	Toggle between CASCADE and BASIC mode.
Empty Box	Ctrl - KP,	33722	Change to OFF state.
Double-down Arrow	Ctrl - KP1	33710	Ramp target value down by 4.0%.
Man/Auto	Ctrl - KP3	33720	Toggle between MANUAL and AUTO mode.
Manual	Ctrl - Alt - KP3	33721	Change to MANUAL mode.
Auto	Ctrl - Shift - KP3	33723	Change to AUTO mode.
Cmptr	Ctrl - Alt - KP3	33718	Change to COMPUTER mode.
Local	Ctrl - Shift - KP3	33717	Change to LOCAL mode.
Casc	Ctrl - Alt - KP6	33741	Change to CASCADE mode.
Ratio	Ctrl - Alt - KP9	33742	Change to RATIO mode.
Basic	Ctrl - Shift - KP6	33743	Change to BASIC mode.
Function Keys			
Area 1	Alt - 1	33280	User defined graphic display.
Area 2	Alt - 2	33281	User defined graphic display.
Area 3	Alt - 3	33282	User defined graphic display.
Area 4	Alt - 4	33283	User defined graphic display.
Area 5	Alt - 5	33284	User defined graphic display.
Area 6	Alt - 6	33285	User defined graphic display.
Area 7	Alt - 7	33286	User defined graphic display.
Area 8	Alt - 8	33287	User defined graphic display.
Area 9	Alt - q	33288	User defined graphic display.
Area 10	Alt - w	33289	User defined graphic display.
Area 11	Alt - e	33290	User defined graphic display.

Table B-1. Key Code Descriptions (continued)

Key Label	QWERTY Key-Map	Decimal Code	Description
Area 12	Alt - r	33291	User defined graphic display.
Area 13	Alt - t	33292	User defined graphic display.
Area 14	Alt - y	33293	User defined graphic display.
Area 15	Alt - u	33294	User defined graphic display.
Area 16	Alt - i	33295	User defined graphic display.
Area 17	Alt - a	33296	User defined graphic display.
Area 18	Alt - s	33297	User defined graphic display.
Area 19	Alt - d	33298	User defined graphic display.
Area 20	Alt - f	33299	User defined graphic display.
Area 21	Alt - g	33300	User defined graphic display.
Area 22	Alt - h	33301	User defined graphic display.
Area 23	Alt - j	33302	User defined graphic display.
Area 24	Alt - k	33303	User defined graphic display.
Area 25	Alt - z	33304	User defined graphic display.
Area 26	Alt - x	33305	User defined graphic display.
Area 27	Alt - c	33306	User defined graphic display.
Area 28	Alt - v	33307	User defined graphic display.
Area 29	Alt - b	33308	User defined graphic display.
Area 30	Alt - n	33309	User defined graphic display.
Area 31	Alt - m	33310	User defined graphic display.
Area 32	Alt - ,	33311	User defined graphic display.
Menu Keys			
Alarm Summ	F17	33408	Alarm Summary.
Systm Stat	F4	33418	System Status.
Action	Alt -]	33662	Action Log.
Log Summ	Alt - -	33410	Log Summary.
Disp Summ	F5	33409	Display Summary.
Gen Fun	F1	33416	General Functions Menu.
Misc Menu	F3	33702	Miscellaneous Menu.
Help	Help	33415	Help Display.
Tune	F8	33411	Tune Block.
Detail	F9	33412	Block Details.
Op Param	F7	33413	Operating Parameters.
Cmd Line	F2	33660	Command Line Functions.
Disp	Alt - 9	33421	Call up selected tag's primary display.
Disp by Name	Alt - 0	33419	Call up specified display.
Log by Name	Alt - +	33420	Print or display specified custom logs.
Back	Insert	33424	Move back one display (from call up history).
Mark	Select	33425	Mark display.
Prev Page	Prev	33426	Move to previous page in multi-page screen.

Table B-1. Key Code Descriptions (continued)

Key Label	QWERTY Key-Map	Decimal Code	Description
Password	Alt - p	33427	Password.
Group Graph	F10	33423	Group Graphic.
Cancl	F12	33428	Cancel.
Calc	Ctrl - KP0	33430	Calculator.
Note	Ctrl - KP.	33431	Operator notes.
Fwd	Remove	33432	Move forward one display (from call up history).
Recall	Find	33433	Recall display previously marked with MARK key.
Next Page	Next	33434	Move to next page in multi-page screen.
Crt#	Alt - <	33436	Target CRT# for next key stroke.
Switch Crt	F6	33435	Toggle between CRT's.
Assign Prntr	Alt - ;	33438	Assign printer.
Print	Alt - ‘	33439	Print screen.
Red Tag	Ctrl - Alt - KP.	33696	Call up Red Tag dialog box.
Ack Alarm	F18	33724	Acknowledge single alarm.
Page Ack	F19	33740	Acknowledge all alarms on screen.
Silenc	Do	33771	Silence alarm tone.
Page Clear	Shift - F17	33756	Clear all RTN alarms on alarm page.
Alarm Clear	Shift - F18	33757	Clear individual RTN alarms on alarm page.
Alarm Hold	Shift - F19	33772	Hold (freeze) alarm page.
Miscellaneous Keys			
!	Shift - 1	32801	Exclamation point.
#	Shift - 3	32803	Pound sign.
‘	‘	32807	Single quote.
@	Shift - 2	32832	At sign.
[	[	32859	Open bracket.
\	\	32860	Back slash.
]	]	32861	Close bracket.
^	Shift - 6	32862	Circumflex.
_	Shift - -	32863	Underscore.
‘	‘	32864	Grave.
{	Shift - [	32891	Open brace.
|	Shift - \	32892	Vertical bar.
}	Shift -]	32893	Close brace.
~	Shift - ‘	32894	Tilde.

Index

C

Color index codes 3-1
Commands 3-1

D

Display building options 2-1
    Console configuration utilities 2-1
    Elementary line editor 2-2
Document conventions 1-2

E

ELE (elementary line editor) 2-1
Example source files A-1

G

Glossary 1-2
Guidelines 2-2

H

How to use this instruction 1-1

I

Instruction content 1-1
Intended user 1-1

K

Key codes 3-1, B-1

R

Reference documents 1-3

S

SODG (screen oriented display generator) 2-1
Source files 2-3
    Examples A-1, B-1

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