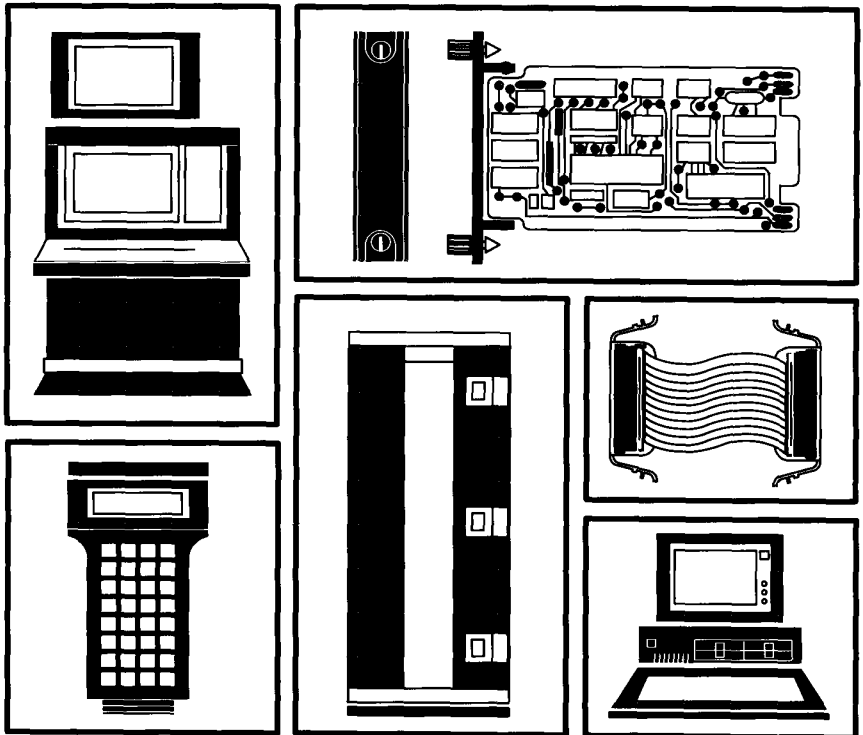




# Instruction

## Personal Computer Software Process Control View (PCV) (Release 2.0)



## NOTICE

The information contained in this document is subject to change without notice.

BAILEY CONTROLS MAKES NO WARRANTY OF ANY KIND WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Bailey Controls shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

This document contains proprietary information which is protected by copyright. All rights are reserved. No part of this document may be photocopied or reproduced without the prior written consent of the Bailey Controls Company.

---

## Preface

---

Process Control View (PCV) allows monitoring of live system data from the INFI 90 Strategic Process Management System

This manual explains the installation, configuration, and operation of PCV

The reader is assumed to have a familiarity with process control systems and with Bailey's INFI 90 system. This manual is not intended as a tutorial

This instruction replaces and supersedes all previous releases of the instruction, including I-E93-916-20ADVCY

---

## List of Effective Pages

Total number of pages in this manual is 116, consisting of the following

Page No.	Change Date
Preface	Original
List of Effective Pages	Original
iii through vii	Original
1-1 through 1-5	Original
2-1 through 2-7	Original
3-1 through 3-59	Original
4 1 through 4-25	Original
A-1 through A-4	Original
B 1	Original
C 1 through C-6	Original
D 1	Original
E-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When an update is received, insert the latest changed pages and dispose of the superseded pages.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

	<i>Page</i>
<b>SECTION 1 — INTRODUCTION</b> . . . . .	<b>1-1</b>
OVERVIEW . . . . .	1-1
MANUAL CONTENT . . . . .	1-2
REQUIREMENTS . . . . .	1-2
Hardware . . . . .	1-2
Software . . . . .	1-2
Upgrade Package . . . . .	1-3
RELATED DOCUMENTS . . . . .	1-3
STANDARD DOCUMENT CONVENTIONS . . . . .	1-4
GLOSSARY . . . . .	1-5
<b>SECTION 2 — INSTALLATION</b> . . . . .	<b>2-1</b>
PCV HARDWARE . . . . .	2-1
CREATING A DOS PARTITION AND LOADING DOS . . . . .	2-1
INSTALLING PCV . . . . .	2-2
UPGRADING A PREVIOUS RELEASE OF PCV . . . . .	2-7
<b>SECTION 3 — OPERATION</b> . . . . .	<b>3-1</b>
GENERAL INFORMATION . . . . .	3-1
Entering User ID and Password . . . . .	3-1
Editing Menu Fields . . . . .	3-2
Available Monitoring Displays . . . . .	3-3
Alarm Groups . . . . .	3 3
Printing Screen Displays . . . . .	3-4
Accessing the DOS Partiton . . . . .	3 4
CHARACTER BASED GROUP DISPLAYS . . . . .	3-5
SYSTEM CONFIGURATION . . . . .	3-9
Group Display Configuration . . . . .	3-9
Database Tag Configuration . . . . .	3-11
TREND TAG CONFIGURATION . . . . .	3-15
LOG CONFIGURATION . . . . .	3-18
Periodic Log Configuration . . . . .	3-18
EDIT LOG PARAMETERS . . . . .	3-18
EDIT LOG FORMAT . . . . .	3-20
Creating The Log Image and Entering Strings . . . . .	3 21
Entering Spreadsheet Data - Numeric and Cell References . . . . .	3-22
Entering Tag Database Tag References and Calculations . . . . .	3-22
Saving The Log Format . . . . .	3-23
Trip Logs . . . . .	3 23
TRIP SYSTEM CONFIGURATION . . . . .	3 23
TRIP CRITERION GROUP CONFIGURATION . . . . .	3-24
TRIP PARAMETER CONFIGURATION . . . . .	3-25
GENERAL CONFIGURATION . . . . .	3-26
TRIP PARAMETER SELECTION . . . . .	3-28
GRAPHICS CONFIGURATION . . . . .	3-29
Load Graphic Files . . . . .	3-29
Graphic Converter . . . . .	3 29
MAXIMUM (.dt) DISPLAY FILE SIZE . . . . .	3-30
Preview Graphic Symbols . . . . .	3 30
Preview Graphics . . . . .	3-30

## Table of Contents

	<i>Page</i>
<b>SECTION 3 — OPERATION (continued)</b> . . . . .	<b>3-1</b>
Configure Graphic Displays . . . . .	3-31
<b>CONFIGURE DISPLAY SUMMARY (Level 1)</b> . . . . .	3-31
Save . . . . .	3-31
Edit Box . . . . .	3-32
Configure Group Summary . . . . .	3-32
Exit . . . . .	3-32
<b>CONFIGURE GROUP SUMMARY (Level 2)</b> . . . . .	3-32
Edit Title . . . . .	3-33
Exit . . . . .	3-33
<b>CONFIGURE GROUP DISPLAY (Level 3)</b> . . . . .	3-33
Edit Box . . . . .	3-33
Edit Title . . . . .	3-34
Exit . . . . .	3-34
Graphic Control ON/OFF . . . . .	3-34
Configure Graphic Displays Tutorial . . . . .	3-35
<b>EDIT ENGINEERING UNIT/LOGIC STATE DESCRIPTORS</b> . . . . .	3-37
<b>TEXT TAG MESSAGES</b> . . . . .	3-38
<b>SYSTEM OPTIONS</b> . . . . .	3-38
Graphics Card . . . . .	3-38
Mylar Keyboard (Future) . . . . .	3-39
Intellicon Serial Card . . . . .	3-39
Genicom 3404 Color Printer . . . . .	3-39
Alarm Printing . . . . .	3-39
Periodic Logs and Trip Logs . . . . .	3-39
<b>ALARM SUMMARY</b> . . . . .	3-40
<b>DATA BASE QUERIES</b> . . . . .	3-42
<b>LOG RETRIEVAL</b> . . . . .	3-43
Edit Historical Periodic Log Data . . . . .	3-43
Demand a Periodic Log . . . . .	3-46
Trip Retrieval . . . . .	3-47
<b>DEMAND PLOT</b> . . . . .	3-48
<b>DEMAND LOG</b> . . . . .	3-48
<b>GRAPHIC DISPLAYS</b> . . . . .	3-49
Graphic Control . . . . .	3-49
<b>LOGIC CONTROL</b> . . . . .	3-49
Station Control . . . . .	3-50
Remote Control Memory, Multi-State and Device Driver Control . . . . .	3-50
Remote Manual Set Constant Box Control . . . . .	3-51
<b>TREND DISPLAY CONTROL</b> . . . . .	3-51
<b>UTILITIES</b> . . . . .	3-53
Backup/Restore Configuration . . . . .	3-53
<b>BACKUP CONFIGURATION</b> . . . . .	3-53
<b>RESTORE THE SYSTEM CONFIGURATION</b> . . . . .	3-53
<b>LOAD MCS TAG DATABASE FILES</b> . . . . .	3-53
Log Utilities . . . . .	3-54
Floppy Disk Utilities . . . . .	3-54

# Table of Contents

	<i>Page</i>
<b>SECTION 3 — OPERATION (continued)</b> . . . . .	<b>3-1</b>
System Diagnostics . . . . .	3-55
<b>DIAGNOSTICS</b> . . . . .	3-55
SYSTEM MESSAGES . . . . .	3 56
SYSTEM STATUS . . . . .	3-56
SYSTEM ACTIVITY . . . . .	3-56
Trend Monitor . . . . .	3-56
Enable/Disable Alarm Printing . . . . .	3-58
Enter Time and Date . . . . .	3-58
LOGOFF SYSTEM . . . . .	3-59
<b>SECTION 4 — EXTENDED RIPCAM FUNCTIONS</b> . . . . .	<b>4-1</b>
ENTERING TAGS . . . . .	4-1
<b>CALCULATION TYPE EXTENDED FUNCTION</b> . . . . .	4-2
Live Values Calculation Type . . . . .	4-3
Integration Calculation Type . . . . .	4-4
Average Calculation Type . . . . .	4-5
Minimum Value Calculation Type . . . . .	4-6
Maximum Value Calculation Type . . . . .	4 7
Export And Import Calculation Types . . . . .	4-8
<b>DATING EXTENDED FUNCTIONS</b> . . . . .	4-9
<b>ERROR MODE OPTION</b> . . . . .	4-10
<b>CALCULATION PERIOD OPTION</b> . . . . .	4-11
Calculation Period Delay Option . . . . .	4 12
Delay Overview Chart . . . . .	4-13
Calculation Sample Rate Option . . . . .	4-14
<b>RELATIVE ADDRESSING</b> . . . . .	4-15
<b>HOW TO ADD DATE AND TIME TO A LOG</b> . . . . .	4-16
<b>HOW TO EXPORT CALCULATED VALUES TO THE PLANT LOOP</b> . . . . .	4-17
Requirements . . . . .	4-17
<b>LOG SIZING AND DESIGN</b> . . . . .	4-18
<b>HOW TO COMPUTE 'SMART' AVERAGES</b> . . . . .	4-19
<b>PRINTER CONTROL BY A LOG</b> . . . . .	4-20
Form Feeds . . . . .	4-20
Compressed Printing . . . . .	4-20
<b>HOW TO DISPLAY MESSAGES AND WARNINGS</b> . . . . .	4-21
<b>IMPLEMENTATION OF LONG TERM LOGS</b> . . . . .	4-22
Example Of Implementation Of A Long Term Log . . . . .	4-24
<b>APPENDIX A — CIU HARDWARE SETUP INFORMATION</b> . . . . .	<b>A-1</b>
<b>OVERVIEW</b> . . . . .	A-1
<b>CIU</b> . . . . .	A-1
LSM Switch Settings . . . . .	A-2
BTM Switch Settings . . . . .	A-3
IHPCV01 TO NTMF01 SERIAL CABLE . . . . .	A-4
<b>APPENDIX B — PCV MENU STRUCTURE</b> . . . . .	<b>B-1</b>

## Table of Contents

	<i>Page</i>
<b>APPENDIX C — PCV HARDWARE CONFIGURATION</b> . . . . .	<b>C-1</b>
GRAPHICS CARDS . . . . .	C-1
EGA480 Card Switch Settings (Bailey P/N 1948493_5) . . . . .	C-1
Bailey Graphics Card Switch Setting (Bailey P/N 6636087_1) . . . . .	C-1
CONNECTING THE MONITOR . . . . .	C 2
MATROX CARD SWITCH SETTINGS (Bailey P/N 1948658_1) . . . . .	C 3
CTI INTELLICON 4 PORT SERIAL CARD SWITCH SETTINGS (Bailey P/N 1948657_1) . . . . .	C 3
MYLAR KEYBOARD . . . . .	C-4
<b>APPENDIX D — QNX OPERATING SYSTEM</b> . . . . .	<b>D-1</b>
<b>APPENDIX E — SETUP INFORMATION</b> . . . . .	<b>E-1</b>

## List of Figures

<i>NO.</i>	<i>Title</i>	<i>Page</i>
1-1.	Hardware Configuration . . . . .	1-3
3-1	Main Menu . . . . .	3-2
3-2	Group Displays Menu . . . . .	3-5
3 3	Sample Group Display . . . . .	3 6
3-4	Station Faceplate Display . . . . .	3 7
3 5.	Remote Control Memory (RCM) Display . . . . .	3 7
3 6	Remote Manual Set Constant (RMSC) Display . . . . .	3 8
3-7	Group Configuration Menu . . . . .	3-9
3-8	Default Group Display . . . . .	3-10
3 9	Tag Configuration Menu . . . . .	3 11
3-10	(Record) Display for Station Tag Type . . . . .	3 12
3-11	Trend Tag Configuration Menu . . . . .	3-15
3-12	Edit Trend Tag Index (Record) Display . . . . .	3 16
3 14	Edit Log Parameters Menu . . . . .	3 19
3-13	Periodic Log Configuration Menu . . . . .	3-19
3-15	Log Format Spreadsheet Display (RIPCAM) . . . . .	3 21
3 16	Trip Configuration . . . . .	3 24
3 17	Trip Parameter Configuration . . . . .	3-25
3 18	Edit General Trip Parameters . . . . .	3 26
3 19	Trip Parameters Group Selection . . . . .	3-27
3-20	Edit Parameter Indicators . . . . .	3-28
3 21	Graphics Configurator Hierarchy . . . . .	3-31
3 22	Text Tag Messages Screen . . . . .	3 38
3 23	Alarm Summary Display . . . . .	3 40
3 24.	Enter Data Base Query Conditions Display . . . . .	3 42

## List of Figures (continued)

<b>NO.</b>	<b>Title</b>	<b>Page</b>
3 25	Historical Data Selection Menu . . . . .	3-44
3 26	Representation of Archived Logs Stored to Disk . . . . .	3 46
3-27.	Trip Retrieval Menu . . . . .	3-47
3-28	System Monitor Diagnostics Display . . . . .	3-55
3 29	System Activity Bar Chart . . . . .	3-57
3-30	Trend Monitor Screen . . . . .	3-57
3-31.	Set System Time and Date Display . . . . .	3 58
4-1	Sample Log on RIPCAM Spreadsheet . . . . .	4 25
A 1.	CIU Cable Connections . . . . .	A 1
B-1.	PCV Menu Structure . . . . .	B-1
C-1	Cabling for use with SODG . . . . .	C-3
C 2	Cabling for use with PCV . . . . .	C-3
C-3.	Matrox Card Switch Settings . . . . .	C 4
C-4	CTI Intellicon Card Switch Settings . . . . .	C-5



---

## SECTION 1 — INTRODUCTION

---

### OVERVIEW

Process Control View (PCV) is a personal computer based control package. This package allows the user to monitor, analyze and manipulate live system data from the INFI 90 Strategic Process Control System or Command Series products. PCV includes:

- Character Based Group Displays** System tags (points), as defined by the user, can be divided into groups to keep related tags together. Up to 64 groups can be defined, each displaying up to 12 values (tags). Displays include Manual/Auto stations, Remote Manual Set Constants, control outputs and Remote Control Memories (RCM).
- Alarm Summary** System alarms are recorded in an alarm summary, and are updated every second to show the most recent changes in point status. Each tag in the database is associated with an alarm in the alarm summary, and with a primary graphic display. If the tag goes into alarm, the primary graphic display may be accessed with a single keystroke from the alarm summary. Alarms can be divided into 99 alarm groups to simplify tag location.
- Graphics** A graphic image of the controlled process can be used to monitor tag values. This generated image is created with the Screen Oriented Display Generator (SODG) section of the Software Logging Database Graphics (SLDG) package. A Graphic Display Generator allows Trend and/or group display generation while on line. Each graphic may contain up to 100 dynamic elements.
- Periodic Log** A Periodic Logging package is included to provide data management and calculation functions. Any data read from the INFI 90 system over a specified period of time can be recorded in the form of a log. The user can define up to 64 separate logs, containing up to 100 calculations, each with a unique layout and appearance. A spreadsheet called RIP-CAM<sup>®</sup> is used to create all logs.
- Trip Log** The Trip Logging System enables a user to log and plot data relating to events occurring before and after a plant process trip.
- The user has the option of defining the amount of pre and post trip data desired, and also defining trip groups containing related process tags. Tags may also be configured for each trip group that acts as a trigger for initiation of post trip logs.

**INTRODUCTION**

---

If a trigger condition for a group exists, an automatic trip log containing pre and post trip data (from tags configured for the group) will be generated and sent to the printer connected to parallel port one. The user may also choose to plot the trip data

---

**MANUAL CONTENT**

This manual has 4 sections. Section 1 is the Introduction. It provides a summary of the main features, the hardware and software provided and a glossary of related terms. Section 2 explains software loading procedures. Section 3 provides a description of operation for each function. Section 4 covers the extended RIPCAM functions available for the periodic logging package.

---

**REQUIREMENTS**

---

**Hardware**

Intel 386 or Compaq 386 based computer with:

- 500 tag version requires 2.0 megabyte accessible memory minimum
- 1500 tag version requires 2.5 megabyte accessible memory minimum
- 1 2 Megabyte floppy drive
- 42 Megabyte hard disk
- EGA, EGA480 or VGA (IBM compatible)
- Bailey Graphics Card for SODG
- Multi-Scan EGA/VGA compatible monitor (Mitsubishi Diamond Scan or compatible)
- 2 serial ports
- 1 parallel port
- NCIU03/04 Computer Interface Unit
- NPRT01 printer IBM graphics compatible (optional)
- MATROX PG641 graphics processor (optional)
- Mylar keyboard (optional)

---

**Software**

The software includes various program files and data files. The software is supplied on 1.2 Megabyte floppy disks. The disks included are:

- QNX\* Boot
- QNX Utilities
- QNX Qdos/Dfs
- RIPCAM
- PCV Disk 1
- PCV Disk 2
- PCV Disk 3
- SLDG

\* Registered trademark of Quantum Software Systems Ltd

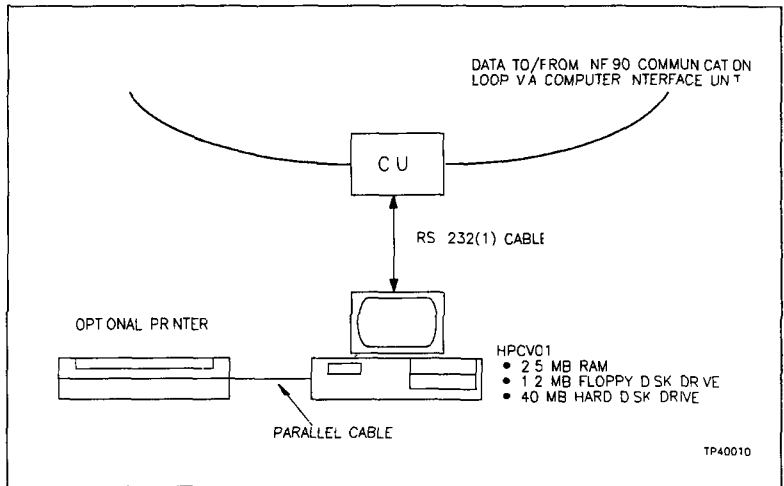


Figure 1-1. Hardware Configuration

### Upgrade Package

Upgrade kits (IHPCCK01/IHPCCK02) are available to upgrade existing Intel 80386 and Compaq® 80386 based computers to a PCV Operator Console. Refer to the previously listed hardware. The kit includes:

- Software as described previously
- Bailey Graphics Card
- IHPCCK01 500 tag version
- IHPCCK02 1500 tag version

### RELATED DOCUMENTS

This manual provides operation and configuration information ONLY. For information concerning material not covered in this document, please refer to:

- E93-900-20 Function Code Application Manual
- E93-905-2 Computer Interface Unit Product Instruction
- E93-916-1A Engineering Work Station CAD/TXT Software Product Instruction
- E93-916-18 Software Logging Database Graphics (SLDG) Product Instruction

**STANDARD DOCUMENT CONVENTIONS**

The following conventions are used to illustrate required keyboard input:

**user response** **[Key]**

where.

**user response**           Text typed by the user

**[Key]**                        The key to be pressed

**[Key1] - [Key2]**           Depress and hold down each key in the sequence shown. Upon pressing the final key in the sequence, release all keys

**Examples:** **1988** **[Enter]**

Type the text in bold, **1988**, then press the **[Enter]** key

**n** **[Enter]**

Type the text in bold, **n**, then press the **[Enter]** key

**[Ctrl] [P]**

Press and hold the **[Ctrl]** key and the **[P]** key in that sequence, then release both.

**[Ctrl] - [Alt] - [Shift] - [Del]**

Press and hold first the **[Ctrl]** key, second the **[Alt]** key, third the **[Shift]** key, and fourth the **[Del]** key (in the numeric key pad), then release all four.

## GLOSSARY

TERM	DEFINITION
CIU	Computer Interface Unit (refer to NCIU03)
DOS	Disk Operating System.
Extended Memory	Memory in the 1 to 16 Megabyte address range is called Extended memory. (Extended and conventional memory are also called <i>linear or non-paged memory</i> .) Extended Memory is used when the 80286 or 80386 microprocessor operates in <b>protected mode</b> .
FC	Function Code (refer to Function Code).
Function Code	The code (number) assigned to functions carried out in an INFI 90 module. Modules may be configured to do algorithms or display values by arranging a group of functions in a certain order.
Linear Memory	A term used for Extended Memory (refer to Extended Memory)
MCS	Management Command System, a microprocessor-based process monitor and control system. Consists of screen, keyboard, disk drives and associated electronics contained in a modular enclosure
Megabyte	A unit of storage equal to 1,048,576 bytes.
NCIU03	INFI 90 Computer Interface Unit. Interfaces computer systems to the INFI 90 Communication Loop.
Communication Loop	The data communication path that links nodes together; 63 node capacity
QNX	Multi-tasking, multi-user real-time operating system
RAM	Random Access Memory.
RCM	Remote Control Memory
SODG	Screen Oriented Display Generator; allows the user to draw and modify displays on a personal computer SODG inputs and outputs files of its own format with the extension DR after the file name.
Tag	An analog or digital process value defined in the PCV as a control and/or monitor point.
Trend Data	Values collected from INFI 90 modules used in plotting trends.



## SECTION 2 — INSTALLATION

### PCV HARDWARE

Refer to **Appendix C** to verify the hardware configuration.

#### NOTES:

1 If the PCV system was purchased complete from Bailey, all required software has already been loaded onto the hard disk and no further configuration is required. Refer to **Appendix A** of this manual and the CIU Product Instruction (E93-905-2) to verify the switch settings of the CIU.

2 If upgrading a previous revision of PCV, be sure to back up the current PCV configuration (refer to **PCV BACKUP/RESTORE** from the Utilities menu in the Operation section of this manual). Go to **UPGRADING A PREVIOUS RELEASE OF PCV** in this section of the manual. This installation procedure removes all information in the QNX partition.

### CREATING A DOS PARTITION AND LOADING DOS

**DOS (Disk Operating System)** must be installed in a DOS partition on the hard disk before PCV is installed. The DOS manual provided includes instructions for installing DOS. Refer to the DOS manual in the section entitled **Preparing Your Fixed Disk**.

**NOTE:** This will **DESTROY ALL INFORMATION** in the DOS partition. The hard disk must be partitioned into two sections.

A one for DOS  
B one for QNX

If DOS currently accesses the entire hard disk, the DOS partition must be removed and made smaller. Doing this will destroy all information now in the DOS partition. Back up all required data from the DOS partition before starting this procedure.

1. When instructed to start **FDISK** to partition the disk, you will be asked if you wish to use the entire fixed disk for DOS. Press **N** for no. The entire disk will not be used for DOS.
2. If DOS currently accesses the entire hard disk, the DOS partition must be removed and made smaller. Doing this will destroy all information now in the DOS partition. Back up all required data from the DOS partition before starting this procedure.
3. PCV requires a minimum of 30 Mbytes hard disk space. This means the QNX partition must be at least 30 Mbytes. The remainder may be placed in the DOS partition.
4. Follow the remaining instructions as stated in the DOS manual.

**INSTALLING PCV****NOTES:**

1 A DOS partition must be created and DOS loaded before PCV is installed. Failure to do so will result in improper operation.

2 QNX commands are case sensitive. When instructed to enter text, type the text exactly as shown.

3 In QNX, the DOS disk drive A is called drive 1, DOS disk drive B is called drive 2, etc.

1. Insert the QNX Boot disk into floppy disk drive 1. Apply power.

2. At the *Login.* prompt, type

**qnx** **(Enter)**

3. At the **\$** prompt, type

**install** **(Enter)**

4. Information about the QNX Installation program will be printed to the screen. Press **(Enter)** to continue.

5. The install program prompts for keyboard selection.

*QNX Keyboard Selection*

*Will you be using a non - U.S. Keyboard with QNX?*

**YES**

**NO**

Select **NO**

6. Information about creating a QNX partition on the hard disk will be printed to the screen. Press **Enter** to continue.

7. A list of QNX supported hard disk controllers will be printed to the screen. PCV expects a Bailey EWS type computer. Select this option by pressing **2**.

8. The installation program examines the hard disk in the computer and lists its size and parameters to the screen.

**NOTE:** PCV must have at least a 30 Mbyte partition on the hard disk for optimum operation.

Examine the listing. If correct, press **y** for yes.

If incorrect, the computer may require further setup. A diagnostic or setup disk should have come with the computer in

which the system options are defined. Verify the correct hard disk type is defined.

9. Read the information printed to the screen. It briefly describes disk partitioning, and provides information on the use of the next screen

A printout of this display may be obtained if a printer is connected to the first parallel port. The following key sequence must be done in the order shown

**Ctrl** **Alt** **PrtScn**

After reading, press **Enter** to continue.

10 The four available partitions are listed at the top part of the screen. An arrow is pointing to the first partition slot. Press the **↓** or **↑** key until the arrow points to a blank partition slot.

**NOTE:** If you are upgrading a previous revision of PCV a QNX partition may already exist. If the name *qnx* appears in the first column under the heading OS name the QNX partition does exist. If you wish to re-install the QNX partition (perhaps to change the partition size), you must first delete the existing one. Do this by pressing the **↓** key until the arrow points to the *qnx* partition then press **d** to delete. Otherwise proceed to Step 15

11. Press **c** to add a partition

12. Select a QNX type operating system (os) by typing.

**7** **Enter**

13. Select the starting cylinder for the QNX partition. The starting cylinder for QNX will be one (1) plus the number of the end cylinder used for the DOS partition. The cylinders selected for the DOS partition appear on the screen. Locate the number of the end cylinder used for the DOS partition. Add one to this number and use that number for the starting cylinder for the QNX partition.

Type this number and press **Enter**.

14. Select the end cylinder for the QNX partition. Normally this is the last available cylinder. The first available cylinder and the last available cylinder appear towards the bottom of the screen. Locate the number for the last cylinder. Type this number and press **Enter**.

If the last cylinder is not used, select a cylinder number other than this number. Remember to allow at least 30 Mbyte of disk space for the QNX partition

15 Press **a** to save changes.

**NOTE:** In a later step a QNX boot loader will be installed. This boot loader allows the user to select the hard disk partition to boot from. The partitions are referred to by number. Locate the partition number of the DOS and QNX partitions from this screen and record these numbers in Appendix E.

16. Press **q** to quit.

17. Information about the formatting procedure will be printed to the screen. Press **y** to begin a format of the QNX partition.

18. Information about tracks and heads will be printed to the screen. Read this information, then press **Enter** at the *track,head* prompt. The hard disk will be checked for bad tracks.

19. At the *Disk is OK* prompt, press **Enter**. QNX system files will now be copied to the hard disk.

If this prompt is not received, the hard disk may have bad tracks or heads not located by the system. A bad track/head listing should be attached to the hard disk inside the computer. If not, obtain this listing from the drive dealer. Return to Step one of INSTALLING PCV. At Step 17, enter the track/head listing for the hard disk. If the problem persists, contact your Bailey Service Representative.

20. QNX files are now copied to the appropriate directories on the hard disk. After each system disk is copied to the hard disk, the prompt:

*Do you have another floppy in drive 1 to backup (y/n)?*

is printed at the bottom of the screen. Before answering this question, insert the next system disk in drive 1. Each required disk will be called out in the following steps:

a. Remove the QNX Boot disk from drive 1. Insert the QNX Utilities disk in drive 1. Press **y** to install the utilities.

b. Remove the QNX Utilities disk from drive 1. Insert the QNX Qdos/Dfs disk in drive 1. Press **y**.

c. Remove the QNX Qdos/Dfs disk from drive 1. All QNX files have now been loaded. Press **n** to continue.

21. QNX will now create a boot loader to enable the system to boot from the QNX partition. Press **Enter** to continue.

22. Information about real and protected mode operation will be printed to the screen. PCV requires protected mode operation. Press **b** to select protected mode QNX.
23. Information about which partition the system will boot from will be printed to the screen. Press **y** to write the QNX boot loader. This will enable the system to boot from either the DOS partition or the QNX partition with a single key stroke.
24. The QNX partition must be made the boot partition. Information about this will be printed on the lower half of the screen. Press **Enter** to continue.
25. Select the QNX partition by pressing the **↓** or **↑** key until the arrow points to the QNX partition.
26. Press **b**. This enables the system to boot from the QNX partition.
27. Press **s** to save this configuration.
28. Press **q** to quit.
29. Press **Enter** to continue.
30. Information about the types of display adapters supported by QNX will be listed to the screen. Press **e** to select the EGA type monitor.
31. Press **y** to allow programs to run in graphics mode.
32. Press **n** to disable the use of the extended text mode.
33. When using the QNX operating system, QNX allows text to print to the screen in cyan or white. Press **y** to select cyan characters, **n** to select white characters.
34. Press **y** to add a second console.
35. Press **n** to indicate that QNX is not used in a network environment.
36. Press **Enter** to continue.
37. PCV files will now be loaded. Insert the PCV disk 1 of 3 into drive 1. At the **\$** prompt, type:

**1:/install **Enter****

Follow the instructions presented on the screen for loading PCV system disks.

38. After all PCV system disks are loaded, the message:

*Do you want password security invoked (Y/N)?*

is displayed on the screen

Password protection is available for PCV. If password protection is selected, only users with the correct User ID and Password will be allowed access into PCV. Each user can be given a different permission (security) level

If password protection is not desired, press N. Proceed to Step 39

If password protection is desired, press Y. A display will be printed to the screen:

*UserID = twelve alphanumeric*

*Password = up to eighteen alphanumeric*

*Permission 1 : Monitor ONLY*

*Permission 2 := Control and Monitor*

*Permission 3 := Complete PCV Functionality*

*Pressing Enter for an empty field aborts input*

*-- UserID -- ---- Password ---- Permission*

Type the desired User ID, Password, and Permission into the appropriate fields

**NOTE:** The User ID and Password are case sensitive. For example the passwords

operator and operator

are two distinct passwords. When recording the passwords be sure to record the case used.

The User ID can be up to 12 alphabetic or numeric characters. The Password can be up to 18 alphabetic or numeric characters.

The Permission level is either one, two, or three. Permission level one allows monitor functions only. The user will only be able to view PCV displays. Permission level two allows control and monitoring. The user may view PCV displays, and control process variables. Permission level three allows access to all PCV functions, including configuration.

**NOTE:** When complete other users may be added. This is the ONLY time users can be added to the system. Be sure to enter a possible user now and record a User ID and Password in order to add or delete users. Run start up again. Either method requires ALL User IDs and Passwords be entered again.

When all users are added to the system, proceed with Step 39.

39 Reboot the computer by holding down the following key sequence:

**Ctrl-Alt-Shift-Del**

PCV is now installed. Refer to **Appendix A** of this manual and the CIU Product Instruction (E93-905 2) to verify the switch settings of the CIU.

Set the system options through the Systems Options menu. Refer to **SYSTEM OPTIONS** in the Operation section of this manual.

---

#### **UPGRADING A PREVIOUS RELEASE OF PCV**

1. Back up previous configuration before proceeding. The following steps will remove all configuration information on the hard disk.

2. Return to the system Main Menu

3. Select the second console by typing:

**Ctrl-Alt-2**

4. At the Login prompt, type:

**sys Enter**

At the Password prompt, type:

**system\_logon Enter**

5. Insert PCV disk 1 of 3 into drive 1 and type :

**1:/upgrade Enter**

Follow the instructions which appear on the screen.

6. Set the system hardware and software options through the System Options display. Refer to **SYSTEM OPTIONS** in the Operation section of this manual.



---

## SECTION 3 — OPERATION

---

### GENERAL INFORMATION

The commands to configure, monitor and manipulate system data are provided through a series of menus and graphic displays. This section explains the use of each menu. The first part of the section provides general information and guidelines. The remainder of the section provides detailed information on the use of each command.

The menu portion of the screen display appears at the bottom of each screen. All options have an associated function key next to the menu item. Select options by pressing function keys **F1** through **F10** (NOTE: F0 represents **F10**).

Context sensitive help screens are available to provide extra help with any command or option. Press **F9** to view the help screen at any menu.

The function key **F10** is used at all displays to exit the current operation. Pressing **F10** (represented as F0 on all screens) will exit the user from the current display to the previous display.

Menu names are displayed at the top center of the menu ( --< Menu Name >-- ). Related error or command messages appear on the bottom line of the screen.

The command menus are tree structured, each branching from the Main Menu (Figure 3-1). Refer to Appendix B for a tree structured view of the menu system.

---

### Entering User ID and Password

If password security was invoked during installation, users must enter a predefined User ID and Password. The User ID and Password must have been entered during the initial installation. The User ID is entered at the Login prompt. Obtain the Login prompt by pressing **(Ctrl)-Z**. (The first time the system is brought up, press **(Ctrl)-D**, then **(Ctrl)-Z**). Type the Password at the password prompt

**NOTE:** The User ID and Password are case sensitive. For example, the passwords

operator and opErator

are two distinct passwords. Be sure to use the required case.

Log off the system by pressing **F10** from the Main Menu.

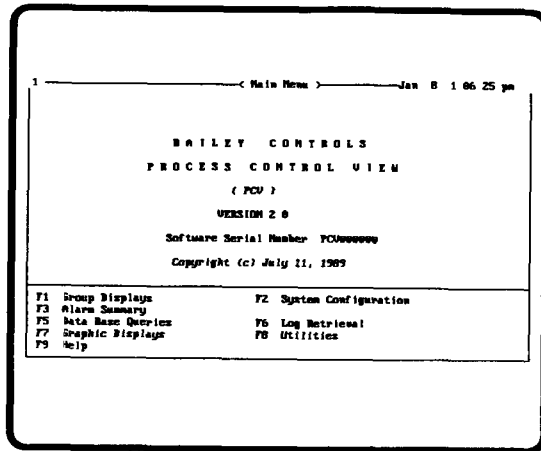


Figure 3-1 Main Menu

### Editing Menu Fields

When a menu displays numerous fields of names, select a field by highlighting the desired name with the arrow keys, then press **[F1]**. If each field on a display has an associated number for that field, the field may also be selected by typing the number to the left of the field. Edit keys are available whenever data is entered into a field. The edit keys are

<b>[Del]</b>	- Delete entire field
<b>[Ins]</b>	- Insert characters after cursor
<b>[Backspace]</b>	- Delete character before cursor
<b>[→] [←] [↑] [↓]</b>	- Move 1 field in the direction of the arrow
<b>[Ctrl]-[→] [←] [↑] [↓]</b>	- Move cursor within field
<b>[PgUp]/[PgDn]</b>	- Move up/down one page
<b>[Enter]</b>	- Move to next field or record
<b>[Home]</b>	- Move to first field
<b>[End]</b>	- Move to last field
<b>[Tab]</b>	- Move right one field

---

### Available Monitoring Displays

Two types of displays are available for monitoring system variables:

Character based Group Displays  
Graphic Displays

While viewing one of these displays, the other displays can be viewed directly by pressing:

**[Alt]-[r]** - to view the Graphics Displays

**[Alt]-[g]** - to view the Text Based Group Displays

**Example:** If group display 5 is being displayed, pressing **[Alt]-[r]** will display the graphic assigned to function key **[F5]**

---

### Alarm Groups

When the tag database is configured, the control engineer may assign each tag to an Alarm Group. There are 99 Alarm Groups total. A tag will go into alarm when its value extends beyond its predefined limits (as defined in the tag database). When a tag goes into alarm, its alarm group number will be displayed at the top left corner of the screen on ALL displays.

The alarm group number printed at the top left corner of the screen is yellow. A red background signifies an unacknowledged alarm. A black background signifies an acknowledged alarm. When all tags for a specified alarm group leave an alarm condition and all are acknowledged, the number is removed from the screen.

Acknowledge an alarm by going to the group, graphic or alarm summary display containing the tag in alarm, and press the grey Plus **[+]** key located in the numeric keypad, on the far right of the keyboard.

The alarm groups are used to quickly locate the display containing the tag in alarm. It is up to the control engineer to assign a primary graphic display to each tag in the tag database. When this tag goes into alarm, it will appear in the alarm summary with a letter on the far left of the screen. The assigned primary graphic will be displayed when the key for this letter is pressed.

**Printing Screen Displays**

System displays may be printed to an optional printer. All displays, **except graphic displays**, are printed by pressing.

**Ctrl** - **Alt** - **PrtScn**

A small window is displayed at the lower right section of the screen. Three options are available:

- a) Do Nothing
- b) Print Screen
- c) Save Screen

Press **a** to exit without printing. Press **b** to print the present screen to the printer. Press **c** to save the screen to a text file.

Graphic displays are printed by pressing

**Ctrl** - **p**

The current graphic being displayed is printed to the printer.

**NOTE:** Depending on the complexity of the graphic or trend wait up to 5 seconds (typically) before changing display screens.

**Accessing the DOS Partition**

The hard disk is divided into two sections, or partitions, one for DOS and one for QNX.

PCV runs in the QNX partition. SODG and other DOS programs run in the DOS partition. When the computer is first turned on (or re-booted by holding **Ctrl** **Alt** - **Shift** - **Del**), the QNX loader loads QNX from the QNX partition and PCV is executed. If a DOS application is to be run, the QNX loader must be instructed to load DOS from the DOS partition.

When the computer is first turned on or after a re-boot, the message:

*QNX Loader*  
*Boot Partition \_\_\_\_\_*

is printed to the screen for approximately 1.5 seconds. Notice that the default partition to be booted is the QNX partition. To boot the DOS partition, press the number of the DOS partition. This number should have been recorded at the time of installation. Refer to **Appendix E** for the number.

**NOTE:** The above message is printed to the screen for approximately 1.5 seconds. If the DOS partition is to be booted the DOS partition number must be pressed in this time period. If the time expires re-boot the computer and make another attempt.



If a point is a Remote Manual Set Constant (RMSC), an RCM (Remote Control Memory) or an M/A (Manual/Automatic) station, the output may be changed. To do this, select the desired box by pressing the letter displayed in red in the top left hand corner of each box (Figure 3-3).

If a station faceplate is selected, a row of options appears on the bottom line of the screen (Figure 3-4).

- F1** is for setpoint changes
- F2** is for control output changes
- F3** is for ratio index changes
- F5** selects local or computer mode
- F6** selects automatic or manual mode
- F7** selects auto, cascade or ratio mode
- +** acknowledges alarms

After selecting the appropriate function key (F1 through F7) a new row of options will be displayed on the bottom line of the screen.

When a value is required for input, the value can be entered from the keyboard or the up/down arrow keys can be used for a slow ramp. If the **[Ctrl]** key is pressed at the same time as the **[↑]**/**[↓]** key, a fast ramp will occur.

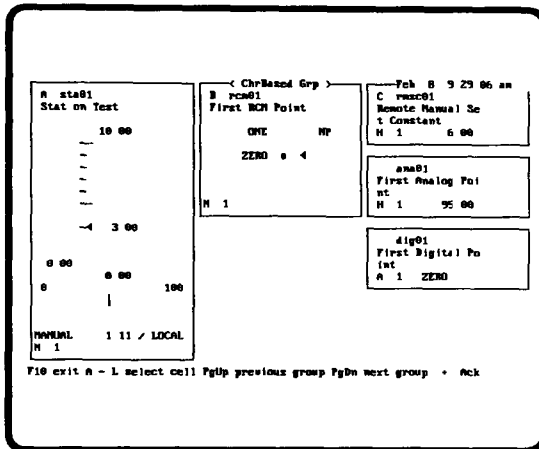


Figure 3.3. Sample Group Display



If a Remote Manual Set Constant (RMSC) is selected, the available options will appear on the bottom of the screen (Figure 3-6). The value can be changed by simply entering a new value.

C rmsc01	
Remote Manual Set Constant	
H 1	3 00
Target	3 00

Enter value F10 exit

Figure 3-6. Remote Manual Set Constant (RMSC) Display

---

**SYSTEM CONFIGURATION**

Press function key **F2** from the Main Menu for the System Configuration menu. This menu provides eight functions:

- F1** Group Displays
- F2** Database Tag Configuration
- F3** Trend Tags
- F4** Logs
- F5** Graphics
- F6** Edit Engineering Units/Logic State Descriptors
- F7** Text Tag Messages
- F8** System Options

---

**Group Display Configuration**

Display the Group Configuration menu (Figure 3-7) by pressing **F1** from the System Configuration menu. Select the group to configure (use the arrow keys or type the number to the left of the desired field) and press **F1**. If this group has not previously been configured, a default tag group is displayed (Figure 3-8). Enter the group name in the top center of the

Group Configuration				Jan 8 1 15 03 pm
01 trig_funcn	02 stat 0305	03 config 0305	04	00
05	06	07	08	00
09	10 dtag1_00305	11	12	00
13	14	15	16	00
17	18	19	20	00
21	22	23	24	00
25	26	27	28	00
29	30 astat1_00305	31	32	00
33	34	35	36	00
37	38	39	40	00
41	42	43	44	00
45	46	47	48	00
49	50	51	52	00
53	54	55	56	00
57	58	59	60	00
61	62	63	64	00
<b>F1</b> Configure Selected Group				
<b>F9</b> Help		<b>F8</b> Exit to Previous Menu		

Figure 3-7 Group Configuration Menu

1 Type 0 Tag	Type 0 Tag	-Jan 8 1 20 51 pm Type 0 Tag
Type 0 Tag	Type 0 Tag	Type 0 Tag
Type a Tag	Type a Tag	Type a Tag
Type 0 Tag	Type 0 Tag	Type 0 Tag

F1 save F10 exit Types 0-analog/digital/RMSC 1-station 2 ½ station 3-RCM

Figure 3-8. Default Group Display

display and describe the tags to be placed in this group. The available tag types are displayed along the bottom of the screen:

- 0 - analog, digital or Remote Manual Set Constant (RMSC)
- 1 - full height station
- 2 - half height station
- 3 - Remote Control Memory (RCM)

Use the arrow keys and move the cursor to one of the boxes. Enter the type of display in the Type field (i.e. 1 for station.) Use the arrow keys and move to the Tag field. Enter the tag name.

**NOTE:** Tags must be configured in the tag database before the tag name is valid. Tag names are defined in this section under the heading Tag Configuration.

More tags in the same group or additional groups can be created in a similar manner. Up to 12 tags can be placed in each group. When complete, press **F1** to save and **F10** to exit.

To view the group display, press **F10** three times to return to the Main Menu. Press **F1** for Group Displays. Select the group previously configured using the arrow keys, and press **F1**.

### Database Tag Configuration

Press **[F2]** from the System Configuration menu to display the tag configuration menu (Figure 3-9)

Tag information is stored in the System Tag database. To edit tag information, highlight the desired tag from the MODIFY CIU DATABASE display (use the arrow keys), then press **[F1]**. Edit the variables for the selected tag using the Edit Tag Index display (Figure 3-10).

The Edit Tag Index display contains two columns of input fields. The left column remains the same for all tag types. The information for each field in the left column is provided by the user. The fields in the right column change for each tag type. The information for each field in the right column is retrieved from the module, and is not modified by the user (except # deci).

Use of edit key functions is described in GENERAL INFORMATION at the beginning of this section and along the bottom of the screen (Figure 3-10).

Changing the tag type to undefined effectively removes the tag from the database, and the tag is then considered blank. This tag is then disestablished from the CIU database.

1		← MODIFY CIU DATABASE →		Jan 8 1 23 27 pm	
Index	Tag Name	Description	Loop	P	H Blk Type
1	test		0	3	3 58 Station
2			0	0	0 Undefined
3			0	0	0 Undefined
4			0	0	0 Undefined
5			0	0	0 Undefined
6			0	0	0 Undefined
7			0	0	0 Undefined
8			0	0	0 Undefined
9			0	0	0 Undefined
10	dig_cnt0305	Digital Count for 00305	0	3	5 1010 RMSC
11	ana_cnt0305	Analog Count for 00305	0	3	5 1011 RMSC
12	ana_low0305	Analog Low Value for 00305	0	3	5 1012 RMSC
13	ana_high0305	Analog High Value for 00305	0	3	5 1013 RMSC
14			0	0	0 Undefined
15			0	0	0 Undefined

F1	Edit tag	F4	Find CIU tag
F3	Find CIU index	F6	Find next blank
F7	Print base rows	F9	Exit to Previous Menu
F9	Help		

Figure 3-9. Tag Configuration Menu

The left column input fields for all tag types are:

- Tag Name** Any descriptive tag name with a maximum of 14 characters  
This name will be used within the system to refer to this tag.
- Tag Desc** Any tag descriptive text with a maximum of 32 characters.
- Loop** The Loop number where the PCU is located (future). This number should always be kept at zero.
- PCU** The PCU number where this tag is located (0-63).
- Module** The module address within the PCU (0-31).
- Block** The block number within the module (1-9999)
- Tag Type** Select the Tag Type by pressing **[Ctrl]-[PgUp]** or **[Ctrl]-[PgDn]**  
The available tag types are:

- UNDEFINED** Undefined effectively removes the tag from the tag database. This defines it to be blank
- TEXT** An exception report which provides an index number to identify a text message. This message can be used in a graphic, Function Code 151
- INT DIGITAL** The Internal Digital tag type is an INTERNAL log calculated value. It is available to other displays and logs within PCV only.

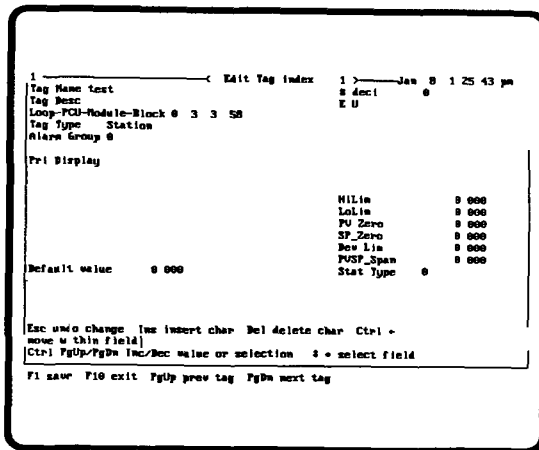


Figure 3-10 (Record) Display for Station Tag Type

**INT ANALOG** The Internal Analog tag type is an INTERNAL log calculated value. It is available to other displays and logs within PCV only.

**NOO STATUS** This tag type provides the system with module status information (only valid in a graphic):

Module in error mode  
Module in execute mode  
Module in configure mode

**MSDD** Multi-State Device Driver tag type, Function Code 129.

**DD** Device Driver tag type, Function Code 123

**RMSC** Remote Manual Set Constant tag type, Function Code 68.

**NOTE:** The RMSC tag type can also be used with the Logging Export function to send calculated values to the Plant Loop. Refer to How to Export Calculated Values to the Plant Loop in the Extended Ripcam Functions section of this manual

**RCM** Remote Control Memory tag type, Function Code 62.

**DIGITAL** Digital exception report, Function Code 45

**ANALOG** Analog exception report, Function Code 30.

**STATION** Any station function code, Function Codes 21, 22 and 80.

**Alarm Group** The alarm group to contain this tag. There are 99 alarm groups total (1-99). When a tag goes into alarm, the alarm group number is printed at the top left corner of the screen and printed in the alarm summary (a tag with alarm group zero (0) will NOT be displayed in the alarm summary if the tag goes into an alarm condition). This can be used to locate tags which go into alarm.

**Pri Display** This is the name of the graphic to be associated with this tag. When an alarm occurs, This graphic can be accessed from the alarm summary.

**Default Value** This value is used to replace a Bad Quality value in log calculations ONLY.

**#dec** The number of decimal places to have for analog values.

Press **[F1]** to save the record. Press **[F10]** to return to the previous menu.

If converting an MCS Database, refer to Load MCS Database Files in section 3.

Options **F3**, **F4**, **F5**, and **F6** of the Tag Configuration Menu (Figure 3-9) are available to move quickly to a desired record in the data base

Pressing **F3** prompts the user for an index number on the error/message line:

*enter ciu index to start editing \_\_\_\_\_*

Type the index number desired and press **Enter**. A range of tags are displayed with the desired tag highlighted

**F4** prompts the user for a tag name on the error/message line:

*enter ciu tag name to find \_\_\_\_\_*

Type the tag name desired and press **Enter**. A range of tags with the desired tag highlighted is displayed. If the tag name is invalid, the error message *unable to find tag* is printed to the screen for two seconds on the error line. Since an exact match of tag name is needed, be sure to distinguish between upper and lower case. As an example, if STA01 is entered and the valid tag name is sta01, no match will be found.

Pressing **F5** seeks to the previous blank tag and displays the record highlighted. An error message appears for two seconds on the error/message line if no blank records are available.

Pressing **F6** seeks to the next blank tag and displays the record highlighted. An error message appears for two seconds on the error/message line if no blank records are available.

**NOTE:** Blank tags are those with a tag type of undefined

**F7** allows the user to get a hard copy of the the system data base records. When this option is selected the bottom line messages are:

*enter index of record to begin printing \_\_\_\_\_*

Type index number and press **Enter**

*enter index of last record to print \_\_\_\_\_*

Type index number and press **Enter**.

*make sure spooler is running, press RETURN when ready, and other key to exit*

Press **Enter**.

*printing data base records*

*printing complete*

## TREND TAG CONFIGURATION

Press **[F3]** from the System Configuration menu to display the Trend tag configuration menu (Figure 3-11)

Trend Tag information is stored in the Trend Tag database. To edit trend tag information, highlight the desired tag (use arrow keys), then press **[F1]**. Use of edit key functions is described in **GENERAL INFORMATION** at the beginning of this section and along the bottom of the screen (Figure 3-12)

Changing the Active Parameter to **NO** and blanking the tag name entry effectively removes the tag from the Trend Tag database, and the tag is then considered **blank**

PCV trending is based upon exception reports not trend blocks. Therefore, all trend index points must be database points connected to exception reporting blocks

The record fields requiring input are.

- Active** Trend Active/Non Active Indicator (Yes/No)
- Tag Name** Any tag name with a maximum of 14 characters. This name shall match the name configured the system tag database
- Tag Sub-Type** Tag Type - PV - process variable  
SP - setpoint (control station)  
CO - control output (control station)

TREND CONFIGURATION LIST							Jan 8 1 28 26 pm	
Index	Tag Name	Sub-Type	Active	Collection	Type	Sampling	File	Period
1		PV	No	Excp	Sap	Norm	15 Sec	0 hours
2		PV	No	Excp	Sap	Norm	15 Sec	0 hours
3		PV	No	Excp	Sap	Norm	15 Sec	0 hours
4		PV	No	Excp	Sap	Norm	15 Sec	0 hours
5		PV	No	Excp	Sap	Norm	15 Sec	0 hours
6		PV	No	Excp	Sap	Norm	15 Sec	0 hours
7		PV	No	Excp	Sap	Norm	15 Sec	0 hours
8		PV	No	Excp	Sap	Norm	15 Sec	0 hours
9		PV	No	Excp	Sap	Norm	15 Sec	0 hours
10		PV	No	Excp	Sap	Norm	15 Sec	0 hours
11		PV	No	Excp	Sap	Norm	15 Sec	0 hours
12		PV	No	Excp	Sap	Norm	15 Sec	0 hours
13		PV	No	Excp	Sap	Norm	15 Sec	0 hours
14		PV	No	Excp	Sap	Norm	15 Sec	0 hours
15		PV	No	Excp	Sap	Norm	15 Sec	0 hours

F1 Edit Trend Tag	
F3 Find Trend Index	
F5 Find press blank	F6 Find next blank
F7 Print Trend Defs	
F9 Help	F8 Exit to Previous Menu

Figure 3-11. Trend Tag Configuration Menu

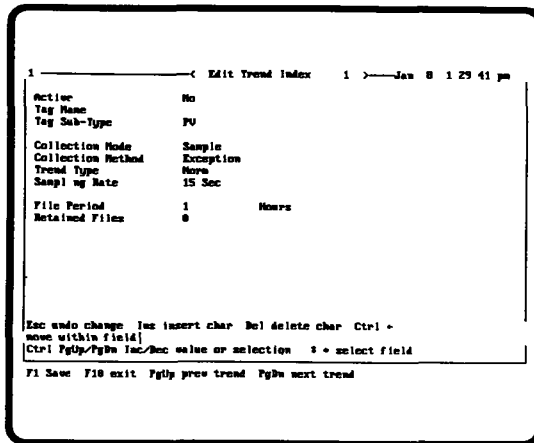


Figure 3-12 Edit Trend Tag Index (Record) Display

- Collection Mode Sample (currently the only choice)
- Collection Method Exception (currently the only choice)
- Trend Type Norm (currently the only choice)
- Sampling Rate Rate - Choices are : 2 sec, 15 sec, 1 min, 10 min
- File Period<sup>1</sup> Period in hours 1 - 240 Hours
- Retained Files<sup>1</sup> Retention Period: 0 - 64 Files

The purpose of the retained files is to determine how much trend data is saved to hard disk. The total time a trend is stored is the file period x number of retained files. For example, if the file period was one hour and there were four retained files then the total trend time available would be four hours

Press **[F1]** to save the record Press **[F10]** to return to the previous menu

Options **[F3]** of the Trend Tag Configuration Menu (Figure 12) is available to move quickly to a desired record in the database

Pressing **[F3]** prompts the user for an index number on the error/message line:

Find Trend index \_\_\_\_\_

<sup>1</sup> Denotes record fields which are not valid for 2 second Sampling Rate

Type the index number desired and press **[Enter]**. A range of tags are displayed with the desired tag highlighted.

Pressing **[F5]** moves to the previous blank trend tag and displays the record highlighted. An error message appears for 2 seconds on the error/message line if no blank records are available.

Pressing **[F6]** moves to the next blank trend tag and displays the record highlighted. An error message appears for 2 seconds on the error/message line if no blank records are available.

Option **[F7]** allows the user to get a hard copy of Trend Tag data base records. When this option is selected the bottom line messages are:

*Enter first index to print \_\_\_\_\_*

*Enter last index to print \_\_\_\_\_*

*make sure spooler is running, press RETURN when ready, and any other key to exit*

*printing data base records*

*printing complete*

---

## LOG CONFIGURATION

The Logging system provides data management and calculation functions. Any data read from the INFI 90 system over a specified period of time can be recorded in the form of a log. Two types of logs are available: Periodic and Trip. The user may define up to 64 separate Periodic logs, each with a unique layout and appearance, or he may define up to 20 Trip Logs.

**NOTE** Each Periodic log may contain 100 calculations and tag references combined. Exceeding this value may affect system performance resulting in longer screen update times and possible missed log samples (especially in the case of 30 second sample rates).

A Periodic log may import (receive) a value from another log, or export (send) a value to another log. These values may be live data read from the INFI 90 system, or values calculated from live data. Each log is run according to the user defined parameters, and may or may not be sent to the printer.

Press **[F4]** from the System Configuration Menu for the Log Configuration menu. This menu provides access to the two types of logs and to general definitions:

- [F1]** Periodic
- [F2]** Trip
- [F7]** General Definition

### Periodic Log Configuration

Press **[F1]** from the Log Configuration Menu to display the Periodic Log menu (Figure 3-13).

---

#### EDIT LOG PARAMETERS

Each Log operates through a spreadsheet (called RIPCAM). Press **[F1]** from the Periodic Log Configuration menu to display the parameters controlling each individual log (Figure 3-14).

- a) A Log must have a Name (1 to 12 alphanumeric). Move the cursor to highlight the Name field and type in the name.
- b) To remove a log, press **[Del]** in the Name field. This will remove the log from being logged, but will not erase it.
- c) Logs are run from a spreadsheet. Select top left corner (First Cell) and bottom right corner (Last Cell) that you want to appear in the Log output (e.g., A1:F90).
- d) A Log copy is made when it is executed. The last current log file becomes the first historical file, the old first historic file becomes the 2nd, etc. (the oldest log is removed). Select number of historical log files in the # of Retained Logs field.

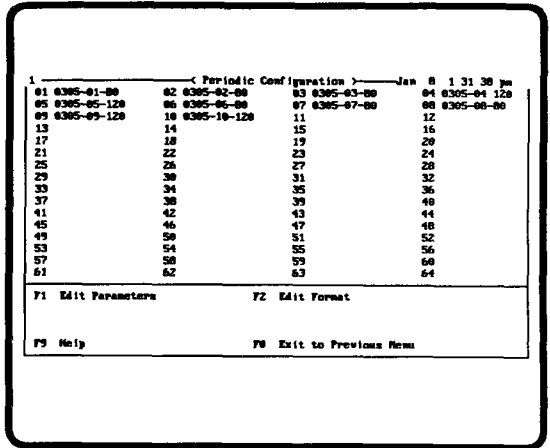


Figure 3-13. Periodic Log Configuration Menu

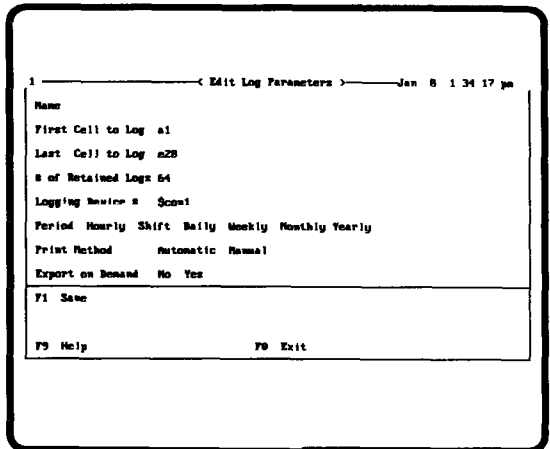


Figure 3-14. Edit Log Parameters Menu

- e) Select the logging output device by entering the name of the device in the **Logging Device #** field. Valid device names are:
- \$null** No log will print, but an historical log will be created on disk.
  - \$lpt** The log will print directly to the printer which is connected to the first parallel port.
  - \$spool** The log will be spooled and printed when the printer is free (the preferred method).
- f) Logs are run on the interval defined in the **Period** field. Use arrow keys to select the desired interval. **On Demand** means that the log will only print on demand. The calculations for that log will still be performed automatically.
- g) The print method is used to define whether a log will print automatically or be demanded manually. Logs to be demanded can have manual values entered before being printed.
- h) Select whether or not exports should be updated when a log is demanded. If export on demand is set to **NO**, exports in the log will not be exported to the database when the log is manually demanded.

---

#### **EDIT LOG FORMAT**

This part of the section describes how to define log functions and appearance. The log function and appearance is based on the **RIPCAM** spreadsheet. For details on the use of **RIPCAM**, refer to the **RIPCAM Manual** provided. For details on Tag references, refer to section 4 of this manual, **EXTENDED RIPCAM FUNCTIONS**. To edit a log format, highlight the desired log on the **Log Configuration** menu (use the arrow keys), then press **[F2]** from the **Periodic Configuration Menu**. The **RIPCAM** program will now be loaded.

Note that the user is now working under the **RIPCAM** spreadsheet program, therefore will be working with **RIPCAM** edit functions (Figure 3-15). The work required of the logging system is defined here, so careful planning should precede log editing.

There are 4 main operations performed in editing a log format:

- 1) Entering all the title and miscellaneous text to create the desired appearance of the log
- 2) Entering all the spreadsheet constants and calculations in the appropriate cells

```

1 >
MODY 1.HELP 2.EDIT 3.FILE 4.FORMAT 5.LIST 6.SCROLL 7.SIG 8.WIND 10.QUIT
Jan 8 2 11 36 pm
DEL>
M1 A I B I C I D I E I F I
11 0305-01-00 Month 0 #01-MONTH,MOY,EX=0
210305-000000 Day 0 #02-DAY,MOY,EX=0
3101 log a Hour 0 #03-HOUR,MOY,EX=0
4100 # of calcs
51
6 Tag Name Low Min Max Avg
Value Value Value Value
71
014lg30_0305 #00=4lg30_0305.L #08=4lg3
014lg31_0305 #09=4lg31_0305.L #09=4lg3
10 4lg32_0305 #010=4lg32_0305.L #C10=4lg
114lg33_0305 #011=4lg33_0305.L #C11=4lg
124lg34_0305 #012=4lg34_0305.L #C12=4lg
134lg35_0305 #013=4lg35_0305.L #C13=4lg
144lg36_0305 #014=4lg36_0305.L #C14=4lg
15 4lg37_0305 #015=4lg37_0305.L #C15=4lg
164lg38_0305 #016=4lg38_0305.L #C16=4lg
174lg39_0305 #017=4lg39_0305.L #C17=4lg
181ana350_0305 #018=ana350_0305.L #C18=ana
19 ana351_0305 #019=ana351_0305.L #C19=ana
20 ana352_0305 #020=ana352_0305.L #C20=ana
21 ana353_0305 #021=ana353_0305.L #C21=ana

```

Figure 3-15. Log Format Spreadsheet Display (RIPCAM)

- 3) Entering all the tag references and calculations as strings.

**NOTE:** Each log may contain up to 100 calculations and tag references combined. Exceeding this value may affect system performance, resulting in longer screen update times and possible missed log samples (especially with 30 second sample rate)

- 4) Saving the completed log format (model). This provides the system with a function template to execute the log at the interval defined by the parameters associated with this log.

In the Edit Log Parameter part of this section, the user defined the area of the log that was to appear in the log printout (or saved image) by defining the upper left spreadsheet cell as the first cell, and the bottom right cell as the last. This part of the section describes how to produce a log in that area, and will outline some of the elementary methods used in entering strings and cell data in a spreadsheet. Refer to the RIPCAM Manual provided with this process control package for details on the use of RIPCAM functions

#### Creating The Log Image and Entering Strings

Before starting it is practical to draw out the image that you want on paper and work from that. Once inside the spreadsheet you can move around and put in the titles and borders as desired. This is done by moving the cursor (use the arrow keys) to the desired cell (the cell will be highlighted) and entering either

a string or cell data Before entering any data into any cells set up the width and format of the cells to be exactly the way you want them displayed using the RIPCAM functions menu

Strings are entered by first entering a double quote (") for left, a caret (^) for center, and a single quote (') for right justified text The highlighted cell has a normal single character cursor in it. Type in the desired text and press **[Enter]** Strings may include border characters to partition the log into a more presentable form

---

#### **Entering Spreadsheet Data - Numeric and Cell References**

Spreadsheet data and calculations refer to constants and calculations performed by the spreadsheet program itself To enter a number or a spreadsheet calculation into a cell simply move the cursor to the cell and type the desired entry followed by **[Enter]**

---

#### **Entering Tag Database Tag References and Calculations**

The RIPCAM spreadsheet is the heart of the Periodic logging functions However, to be useful to the system it must have a way of reading in and writing out tag information to the Tag data base This is the reason that calculation strings are put into a log. They are strings which are passive to the RIPCAM spreadsheet but are used by the system to insert and read data from the spreadsheet data files These strings are generally placed outside the area defined to be the log area but they reference cells within the log print area All PCV calculations have the format @cell-reference=tagname[tag calculation options] All referenced cells must be defined as numeric type cells

System tag references and calculations are detailed in Section 4 of this manual, however a few simple examples will be given here:

**Examples:** The Log is defined to be the area within A1 to G90, so the following calculation strings could be put into column H outside the log area.

a) **@D8=TAG-486-AI,I**

Cell D8 will hold the live value of tag TAG 486-AI that is current at the end of the log period.

b) **@[-4,2]=PMP-22-01,a**

The cell 4 columns to the left of this cell's column and 2 rows down from this row will get the value of the average of the tag PMP-22-01 over the period of this log

c) **@[-4,2]=PMP-22-91,ex**

The cell 4 columns left and 2 rows down from this cell holds the value that will be sent (exported) to tag PMP-22-91 at the end of the log period. Tag PMP-22-91 would be defined in the database as an internal tag type.

d) **@[-5,0]=SLUR-102,im**

The cell 5 columns left of this cell will get (import) the value of the tag SLUR-102 which was exported by another log

**NOTE:** You can not have delays associated with imports or exports

---

**Saving The Log Format**

The log format as designed here is a template for the system in manipulating data. While we are concerned about the calculations and constants that we have entered here, we are not concerned about the actual data as this is dynamic and will be collected and manipulated automatically. We are only concerned with saving the MODEL file of this log here. From the root menu of the spreadsheet select the FILE option, press **[Enter]** to accept the default filename, select the SAVE option, and select the MODEL option to save. Once this is done you may exit back to the Periodic Log Configuration Menu. Refer to section 4 of this manual and the RIPCAM Manual provided with this package for complete details on using the spreadsheet.

---

**Trip Logs**

The Trip Logging System enables a user to log and plot data relating to events occurring before and after a plant process trip.

The user has the capability of defining the amount of pre trip and post trip data desired as well as defining trip groups containing related process tags. Tags may also be configured for each trip group that act as triggers for the initiation of trip logs. If a trigger condition for a group is met, an automatic trip log containing pre and post trip data (from tags configured for the group) is output to the printer connected to parallel port one. The user may also choose to plot the trip data as well.

---

**TRIP SYSTEM CONFIGURATION**

Press **[F2]** from the Log Configuration Menu to enable the user to configure the Trip System (Figure 3-16).

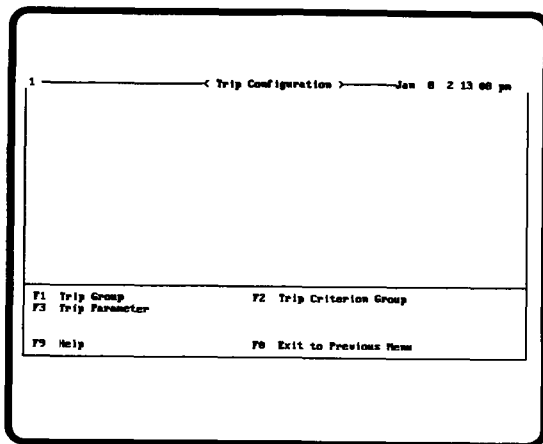


Figure 3-16. Trip Configuration

The following functions are used to define the amount of trip information desired and which tag values to include in the trip review:

- a) trip group configuration
  - define groups of related tags for a given trip
- b) trip criterion group configuration
  - define tags for each group to serve as triggers for trip logs
- c) trip parameter configuration
  - define amount of pre and post trip data required
  - this must be done first before any logs will be generated

#### **TRIP CRITERION GROUP CONFIGURATION**

Criteria are needed that when met will initiate or trigger the output of an automatic trip log. Enter (for each group) a number of tags along with a condition for each tag such that when any of the conditions are satisfied an automatic trip sequence will be put in motion resulting in a trip log being printed.

To enter criteria for a group, press **F3** from the Trip Configuration menu. Up to twenty (20) tags (trigger tags) for each group may be entered. Each tag name must be followed by an operator and a value. The operator and value represent the condition of the tag.





To save the entered parameters, the user must press **[F1]**.

It is necessary to define general trip parameters before group parameters.

Entry of group parameters is identical to general trip parameter entry with the same rules applying.

Press **[F2]** from the Trip Parameter Configuration menu to configure individual trip group parameters (Figure 3-19). Use the arrow keys to highlight the desired group name and press **[F1]**. Edit Trip Parameters For Group menu is displayed. Minimum sampling and number of trip logs saved are not modifiable.

1 < Trip Parameters Group Selection > - Jan 8 2 29 36 pm			
01 trip test1	02	03	04
05	06	07	08
09	10	11	12
13	14	15	16
17	18	19	20

F1 Select Trip Parameter Group	
F9 Help	F8 Exit to Previous Menu

Figure 3-19. Trip Parameters Group Selection

**TRIP PARAMETER SELECTION**

Once general and group trip parameters have been defined the user may now select which groups will use the general parameters and which will use parameters entered for the particular group.

Press [F3] from the Trip Parameter Configuration Menu (Figure 3-17) to receive the Parameter Indications Entry form (Figure 3-20). By highlighting the desired trip group the user may enter y if the chosen group is to use trip parameters defined for the group, or n if the chosen group is to use the set of general parameters.

<Edit Parameter Indicators> Jan 8 2 24 44 pm

GROUPS PARAMETER INDICATOR	
1	n 6 n 11 n 16 n
2	n 7 n 12 n 17 n
3	n 8 n 13 n 18 n
4	n 9 n 14 n 19 n
5	n 10 n 15 n 20 n

y- use group defined trip parameters  
n- use general trip parameters

---

F1 Save Parameter Selection

---

F9 Help F8 Exit to Previous Menu

Figure 3-20. Edit Parameter Indicators

---

**GRAPHICS CONFIGURATION**

Press **F5** from the System Configuration menu to display the Graphics Configuration menu. This menu provides six functions:

- F1** Load Graphics File
- F2** Graphic Converter
- F3** Preview Graphic Symbols
- F4** Preview Graphics
- F5** Configure Graphics Displays
- F7** Graphic Control on/off

---

**Load Graphic Files**

A graphic source file (\*.dt) can be copied from the DOS partition to the system by pressing **F1** from the Graphics Configuration menu.

The full path (including the drive) must be included with the graphic filename

**Example:** **c:/myfile.dt**  
(DOS drive C at the root)  
**c:/mydir/myfile.dt**  
(DOS drive C in directory mydir)  
**a:/myfile.dt**  
(DOS drive A in the root)

Press **F1** to initiate the copy. This file can now be converted (to a .duu extension) using the SODG Graphic Converter function (found in the Graphics Configuration menu)

---

**Graphic Converter**

Press **F2** from the Graphics Configuration menu to convert a graphic source file (\*.dt) into a displayable graphic file (\*.duu). Enter the name of the graphic source file (previously loaded into the system). Press **F1** to initiate the conversion. Press **F10** to exit to the previous menu.

**MAXIMUM (.dt) DISPLAY FILE SIZE**

Very large and complex displays may not operate properly. Use the following formulas to determine the amount of memory required to display a given .dt display file

**required space = number of dynamic symbols x 327 + number of basic dynamics x 40 + number of trends x 24**

If the required space is greater than 38000 there is a good chance that the display will not operate properly.

**Example:**

100 dynamic symbols	x	327	=	32700
+ 120 basic dynamics	x	40	=	4800
+ a 5 trend display	x	24	=	120
				37620 < 38000 (okay)

110 dynamic symbols	x	327	=	35970
+ 100 basic dynamics	x	40	=	4000
				39970 > 38000 (too large)

basic dynamic = analog value  
dynamic bars  
modes  
RCM states

**Preview Graphic Symbols**

Press **[F3]** from the Graphics Configuration menu to preview graphic symbols. 64 symbols can be displayed on each display. Press **[PgDn]** or **[PgUp]** to view other screens. Highlight the desired symbol to view using the arrow keys.

Press **[F1]** to view the symbol against a grid background.

Press **[F2]** to view the symbol against a blank background.

Press **[F3]** to view the symbol with the symbol origin marked with a large cross.

**Preview Graphics**

To preview graphic displays, press **[F4]** from the Graphics Configuration menu. Each screen can display up to 64 graphic display names. Press **[PgDn]** or **[PgUp]** to view other screens. Highlight the desired graphic to view and press **[F1]**. Press **[F10]** to exit the graphic and return to the previous menu.

### Configure Graphic Displays

Press **F5** from the Graphics Configuration menu to create faceplate type graphics displays.

Use this function to create simple, three level hierarchy of graphic displays (Figure 3-21). Graphics displays are invoked by pressing **F7** from the main menu. The display hierarchy is depicted below. Refer to Configure Graphics Displays Tutorial after reading Figure 3-21.

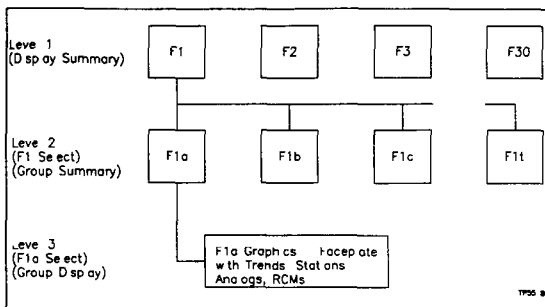


Figure 3-21. Graphics Configurator Hierarchy

Refer to GRAPHIC DISPLAYS key selection information

### CONFIGURE DISPLAY SUMMARY (Level 1)

The Display Summary Configuration menu will first be displayed with the following options:

- F1** Save
- F2** Edit Box
- F3** Configure Group Summary
- F10** Exit

#### Save

Press **F1** from the Display Summary Configuration menu to save and compile any changes made to the display summary (Level 1). Note that this key will have no effect if no changes have been made.

**Edit Box**

Highlight the desired function key using the arrow keys and press **F2** to edit. The fields requiring input are .

- Display Key disable/enable** To select hold **(Ctrl)** and press arrow keys. Select **E** to enable the function key to call up a group summary or graphic display. Select **D** to disable the function key. Note that a disabled function key entry will not appear on the summary graphic.
- 3 Text Lines** Enter text to be displayed in the function key selection box on the summary graphic. A maximum of 10 characters may be entered on each line.
- Display Type** Select *Group* for Graphic building using this Display Configurator. Select *Graphic* if graphic is built off line (MCSLINT or SODG).
- Display Graphic Filename** Enter the graphic filename if Display Type entry is *Graphic*.

**Configure Group Summary**

Highlight the desired function key using the arrow keys and press **F3** to invoke the Group Summary Configuration menu (ie Level 2 displays). Note that the function key selected must be display type *Group* and enabled.

**Exit**

Press **F10** to exit the Display Summary Configuration menu. If changes have been made to this display, but not saved, then a prompt will allow this. Select **Y** to save, **N** to abort, or **Esc** to cancel the exit request.

**CONFIGURE GROUP SUMMARY (Level 2)**

Press **F3** from the Display Summary Configuration menu to invoke the Group Summary Configuration menu. The following options will then be presented:

- F1** Save
- F2** Edit Box
- F3** Configure Group Summary
- F4** Edit Title
- F10** Exit

Functions **F1**, **F2**, and **F3** are similar to Configure Display Summary operations. The functions are for Configuring Group Summary displays (Level 2).

**Edit Title**

Pressing **[F4]** allows you to edit the title of the Group Summary (maximum 30 characters).

**Exit**

Press **[F10]** to exit the Display Summary Configuration menu. If changes have been made to this display, but not saved, then a prompt will allow this. Select **Y** to save, **N** to abort, or **[Esc]** to cancel the exit request.

**CONFIGURE GROUP DISPLAY (Level 3)**

Press **[F3]** from the Group Summary Configuration menu to invoke the Group Display Configuration menu. The following options are presented :

- [F2]** Edit Box
- [F4]** Edit Title
- [F10]** Exit

**Edit Box**

Highlight the desired display box (template) using the arrow keys and press **[F2]** to edit. The fields requiring input are

**Display Type** To select the template type, enter the number followed by the **[F1]** key.

Type	Size	Location	Comment
0	25*25	Anywhere	No Display
1	25*25	Anywhere	All Tag Types
2	25*50	First 3 rows	Automatic Status
3	100*50	Last column in Rows 1 and 3	Half page Trend display (5 trends/display)

**Tag Index** The Tag Index as configured in the Tag Configuration (5 possible entries for trend template)

**Tag Type** To select hold **[Ctrl]** and press arrowkeys. For template types 1 and 2 (nontrend):

AN	Analog (real)
DI	Digital (boolean)
ST	Station (Type 1)
DD	Device Driver
MSDD	Multi-State Device Driver
RCM	Remote Control Memory
RMSC	Remote Manual Set Constant

For template types 3/4 (trend).

AN	Analog (real)
DI	Digital (boolean)
PV	Station Process Variable
SP	Station Set Point
R	Station Ratio Index
CO	Station Control Output

The following are entered for Trends (Types 3/4 templates) only:

- Trend Index** The Trend Index as configured in the Trend Tag Configuration.
- Trend Color** Enter the color for each trend trace.
 

0 Black	4 Blue	8 Orange	12 Blue Magenta
1 White	5 Cyan	9 Yellow-Green	13 Magenta Red
2 Brown	6 Magenta	10 Green-Cyan	14 Dark Gray
3 Green	7 Yellow	11 Cyan-Blue	15 Light Gray
- High/Low Scale Limits** Enter the high/low chart limits for each Trend Tag
- Display Resolution** Enter the display resolution of the trend Display (time between displayed samples - 130 Samples per screen).
- Resolution Units** To select, hold **[Ctrl]** and press arrow keys. Seconds or Minutes.
- Pan Option** Not used

**Edit Title**

Pressing **[F4]** allows you to edit the title of the Group Summary (maximum 30 characters)

**Exit**

Press **[F10]** to exit the Group Display Configuration Menu. Note that the configuration for this display is automatically saved upon exit. The actual display file is not compiled until you exit from the Group Summary Configuration menu. This is done in order to correctly assign display keys between related Group displays. (i.e., the user is able to switch between displays within the same Group Summary by pressing their corresponding selector key without having to return to a higher level.)

**Graphic Control ON/OFF**

Press **[F7]** from the Graphics Configuration menu to change the control capabilities of a graphic. Highlight the desired graphic and press **[F1]** to turn the graphic control ON, or **[F2]** to turn the graphic control OFF.

### Configure Graphic Displays Tutorial

The following list the keyboard entries necessary to configure the following graphics:

Display Summary with F11 entry defined

F11 Group Summary with F11a defined

F11a Group Display with one digit a box and one trend box

The tutorial begins at the main menu.

KEY ENTRY	DESCRIPTION
F2	enter the main configuration menu
F5	enter the graphics configuration menu
F5	invoke the display configurator right arrow
→	
↓	position on edit box for F11 key
F2	edit the F11 box
Ctrl →	enable function key for call up of group summary graphic
↓	next field
text then Enter	fill in the first title line
text then Enter	fill in the second title line
text then Enter	fill in the third title line
↓	leave box as group type - therefore a group summary for F11 can be created
F1	save entry
F10	exit edit box mode
F3	switch to Group Summary edit for F11 key
F2	edit A box
text then Enter	fill in the first title line
text then Enter	fill in the second title line
Ctrl →	enable key to call up group display graphic
↓	next field
↓	leave box as group type - therefore a group display for F11A can be created
F1	save entry
F10	exit edit box mode
F3	switch to Group Display edit for A key
F2	edit box 1
1	25*25 box type
F1	accept box type entry

KEY ENTRY	DESCRIPTION
↓	next entry
11	enter tag index ( as in tag configuration )
<b>Enter</b>	access tag index then to next entry
<b>Ctrl</b> →	select digital tag type
<b>F1</b>	save entry
<b>F10</b>	exit edit box mode
<b>Ctrl</b> →	
<b>Ctrl</b> →	
<b>Ctrl</b> →	
↓	
↓	position at box 12
<b>F2</b>	exit box 12
3	100*50 box type entry
<b>F1</b>	accept box type entry
<b>Ctrl</b> →	to next field
11	enter the trend tag index (as in trend tag configuration)
↓	to next field
1	enter trace color for this tag
←	next field
11	enter the tag index ( as in tag configuration )
↓	select tag type ( analog )
←	next field
00	enter low chart limit for this tag
↑	next field
1000	enter high chart limit for this tag
←	next field
<b>Ctrl</b> →	to select minute resolution
←	next field
2	enter chart resolution ( 2 minutes - per sample )
<b>F1</b>	save entries
<b>F10</b>	exit edit box mode
<b>F10</b>	exit group display edit
<b>F1</b>	save entries and combines F18 graphic
<b>F10</b>	compes F18A graphic
<b>F1</b>	compes display summary graphic
<b>F10</b>	exits the display configure program

**EDIT ENGINEERING UNIT/LOGIC STATE DESCRIPTORS**

Press **F6** from the PCV Configuration menu to display the Edit Descriptors menu. This menu provides two functions

**F1** Edit Engineering Unit Descriptors

**F2** Edit Logic State Descriptors

Engineering unit descriptors are available to provide a descriptive term to plant processes being monitored. This term is presented within group displays next to the numeric representation of the substance being measured. (For example If the water level in a tank were being measured at 16, and the Engineering Unit Descriptor chosen was FEET, the display would read 16 FEET.

Logic state descriptors are also available to provide a descriptive term to logic states (i.e. one and zero or ON and OFF) being monitored. This term is presented within group displays to represent the logic state being measured

Press **F1** from the Edit Descriptors menu to edit engineering unit descriptors, or **F2** to edit logic state descriptors

Four pages of descriptors are available, with a total of 256 descriptors, 64 on each page. The first 16 descriptors are reserved for the Bailey standard descriptors. The first 16 descriptors are:

Engineering Unit Descriptors	Logic State Descriptors
0 Real (blank)	ZERO
1 Boolean (blank)	ONE
2 %	ON
3 DEG F	OFF
4 DEG C	NO
5 PSIA	YES
6 PSIG	CLOSED
7 'H2O	OPEN
8 GPM	LOW
9 CFS	H GH
10 CFM	EMPTY
11 LB/HR	FULL
12 GAL	RUN
13 AMPS	STOP
14 'HG	TR P
15 KLB/HR	(blank)

Press **PgUp** and **PgDn** to view and edit each page. To edit, highlight the desired field using the arrow keys and type the descriptor in the field. Standard editing functions as described in **GENERAL INFORMATION** in this section can be used. Press **F1** to save changes

## TEXT TAG MESSAGES

Press **F7** from the System Configuration menu to display the Enter Text Messages screen (Figure 3-22).

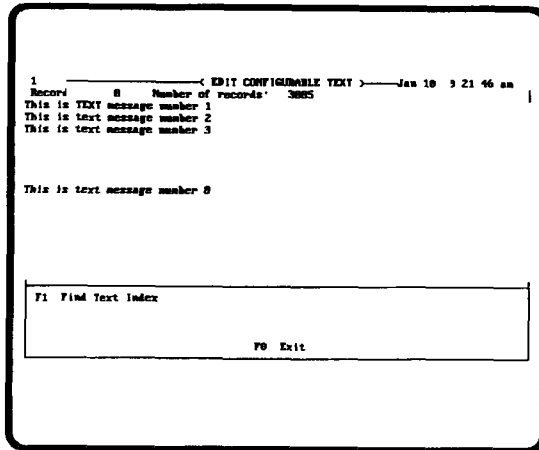


Figure 3 22 Text Tag Messages Screen

Text messages are used in conjunction with Function Code 151 to provide descriptive terms to explain process events. Text messages may appear on any graphic desired. To enter text, use the **F7**, **F8**, **PGUP** or **PGDN** to position the cursor at the desired text record. Press **F1** and then the numerical text record number to set the cursor at a specific record. Then type any text string into the space available (80 characters max.)

## SYSTEM OPTIONS

The system options display allows the user to select various hardware and software options. By using the arrow keys, highlight the desired option. Press **F1** to save, and **F10** to exit to the previous menu. After saving the changes, the system must be rebooted before the changes will take effect.

**NOTE:** Refer to **APPENDIX C** for hardware configuration.

## Graphics Card

Each graphics card requires the proper driver to be mounted in order to display a graphic. The driver is only used to display graphics. Character based displays will be displayed.

regardless of the graphics driver installed. Press **[F7]** from the main menu to display a graphic. If the graphic is displayed correctly on the screen, the proper graphics driver has been selected. If the graphic is not displayed correctly, press **[F10]** to return to the Main Menu and select the proper graphic driver.

**EGA** Standard IBM compatible with 640x350 resolution

**EGA Wonder (old)** An older version of the ATI EGA Wonder Board with 640x480 resolution.

**EGA 480** Extended EGA 640x480 graphics adapters (TTL interface).

Many EGA 480 boards are available which may work with this driver. The EGA480 cards which are known to work are.

1. ATI EGA Wonder 800
2. ATI VIP
3. Paradise AutoSwitch EGA480

**VGA** Standard IBM compatible VGA with 640x480 resolution

**Matrox PG641** Matrox PG641 Graphics Processor, 640x480 resolution.

#### ***Mylar Keyboard (Future)***

Enables support of mylar keyboard. Bailey mylar, switch matrix, and EMKI electronics, and power supply are required.

#### ***Intellicon Serial Card***

Enables support of an intelligent serial port for greater throughput of serial data. This is required for 1500 tag versions only. This option requires the CTI Intellicon Serial Port Card.

#### ***Genicom 3404 Color Printer***

Screen prints are printed to an IBM graphics printer or compatible by default. This option provides support for a color printer. If this option is used, screen prints will no longer print on an IBM graphics printer or compatible.

#### ***Alarm Printing***

Disables the printing of alarms to \$lpt1.

#### ***Periodic Logs and Trip Logs***

The Periodic Log and Trip Logging functions may be disabled if not required. By disabling either or both functions, more processor time and RAM is made available for other functions.

**OPERATION**

**ALARM SUMMARY**

Press **[F3]** from the Main Menu to display the Alarm Summary (Figure 3-23).

1		< ALARM SUMMARY >		Jan 8 2 28.34 pm	
CURRENT	ALARMS	0	UNACKS	5	
Alarm time	Tagname	Tag	Description	Value	EU Stat Gty
F 2 15 40pm	csa01_0100			-1.367	H 1
G 2 15 40pm	tsa01_0100			-0.533	H 1
H 2 04 45pm	csa01_0100			-1.072	H 1
I 2 04 45pm	csa01_0100			1.466	H 1
J 2 04 45pm	trig iw0100			136	H 1

F10 exit PgUp prev pg PgDn next pg Home first pg End last pg - Ack

Figure 3-23 Alarm Summary Display

Any or all tags in the Database which go into alarm will appear in the alarm summary. Alarms in the Alarm Summary can be viewed by scrolling through each page using the **[PgUp]** and **[PgDn]** keys. Alarms are acknowledged by pressing the large **[+]** (plus) key on the numeric key pad. Acknowledged alarms which have returned to their normal state, can be removed from the Alarm Summary by pressing the **[Del]** key on the numeric keypad.

The red letter on the left side of the display, next to each alarm, denotes the primary graphic display for that tag. If a primary display was defined for a tag in the tag database, that graphic will be displayed when the letter to the left of the tag in the Alarm Summary is pressed.

While in the graphic sub-section (**[F7]** from the main menu), the Alarm Summary can be displayed by pressing **[Alt]-A**. Pressing **[Alt]-P** from the Alarm Summary will return to the previous graphic displayed which the Alarm Summary was displayed from.

The Alarm Summary contains six fields of information:

- Alarm Time** The time the alarm occurred.
- Tag Name** The tag name as defined in the tag database.
- Tag Description** The tag description as defined in the tag database
- Tag Value** The tag value at the time of the alarm.
- Status State** The alarm state.
- Group** The group this tag is assigned.

Alarm summaries are updated approximately every second to show the most recent changes in point status

A task called **p\_alarms** is also running in the background. This task is similar to the alarm summary display except that the alarms are printed on the local line printer (the line printer is optional).

## DATA BASE QUERIES

Press **[F5]** from the system Main Menu to enter the Data Base Queries program. A conditional statement can be entered at the ? (question mark) prompt.

**Example:** ? pcu > 1

This conditional statement produces a list of all tags which satisfy the condition where the pcu number is greater than 1 (Figure 3-24).

Up to 20 conditions and any field in the database can be included in the query. Legal query field types are:

INDEX  
TYPE (tag type)  
PCU  
MODule  
BLOCK

Each condition can be embraced in parenthesis, and can be compared using logical operators:

AND  
OR  
NOT

**Example:** ? (pcu > 1) and (pcu < 10) or (type = rcm)

```

1
Enter Query Conditions                               Jan 8 2 32 56 pm
?
Index Name      Description                                     Type      Pcu Mod Block
1 test          Station          3 3 58
2              Undefined      0 0 0
3              Undefined      0 0 0
4              Undefined      0 0 0
5              Undefined      0 0 0
6              Undefined      0 0 0
7              Undefined      0 0 0
8              Undefined      0 0 0
9              Undefined      0 0 0
10 dig cnt8365 Digital Count for 86365          RMSC      3 5 1010
11 ana_cnt8365 Analog Count for 86365          RMSC      3 5 1011
12 ana_low8365 Analog Low Value for 86365       RMSC      3 5 1012
13 ana_high8365 Analog High Value for 86365     RMSC      3 5 1013
14              Undefined      0 0 0
15              Undefined      0 0 0
16              Undefined      0 0 0
17              Undefined      0 0 0
18              Undefined      0 0 0
Press any key for more. F10 to exit --

```

Figure 3-24 Enter Data Base Query Conditions Display

---

**LOG RETRIEVAL**

Periodic Log and Trip Log Data Files can be saved to either the hard disk or to a floppy. These files can be either edited and/or demanded. Press **[F6]** from the Main Menu to access the functions for both types of logs:

**[F1]** Periodic Log

**[F2]** Trip Log

---

**Edit Historical Periodic Log Data**

When a log is executed it is output to the location defined in the log parameters and it is also saved in a file. It may be required that the saved data (historical) be reprinted or reviewed at a later time. It may be that the data collected during the period of the log was inaccurate.

**Example:** Management wants to examine all performance logs of a new machine. However, that machine was out of service for part of the period of the log for one shift, affecting the performance data (e.g., average) in the shift log. To provide a more accurate performance picture to management, the shift supervisor would adjust (edit) the historical data to reflect the machine's performance data for the time that the machine was running.

This is done via a spreadsheet similar to the way the log was originally designed. However, the user may only edit the numeric data fields so that the intent of the log is not altered.

To Edit Historical Data, press **[F4]** or **[F6]** from the Periodic Retrieval Menu with the desired log name highlighted. This will display all the data filenames related to this log (Figure 3-25). Press **[F4]** to allow editing of Historical Data on the hard drive, or press **[F6]** to allow editing of Historical Data on drive 1 (first floppy).

To select the data file that is to be edited, move the cursor to highlight the desired filename and press **[F1]**. This will load the spreadsheet with this data file but will produce the following message display when loading.

Be sure to recalculate spreadsheet and save data file before leaving RIPCAM.

Press any key to continue ..

The user must acknowledge the message by pressing any key before the spreadsheet will continue to load



**NOTES:**

1. When you edit a log the system will run the previous logs. For example, if you demand log 3, the system will run logs 1 and 2. This is to export values (if any) to the previous logs.

2. Only cells that are defined as live average, integration minimum or maximum can be edited. Cells that are imported from another log cannot be edited. These values are updated when the log is updated.

If the previous historical logs are unavailable a warning message

*Unable to establish export values,  
pcv/log/logxx/yy-mm-day\_hh data file missing*

will be displayed. If the user knows the log demanded does not require exports from previous logs, press <Y>

A previous log may be unavailable if the following scenario occurs (Figure 3-26 represents two logs and how they are saved to disk. They are named Log3 and Log1 respectively.):

Log3 is configured as a daily log, which means it records information on a daily basis (once every 24 hours). It is also configured to archive (save to disk) four historical logs. Log3 also imports (receives) data from Log1. In Figure 3-26, log3-1 represents the current log and log3-4 represents the last historical log saved to disk.

Log1 is configured as an hourly log, which means it records information on an hourly basis. It is also configured to archive (save to disk) 24 historical logs. Log1 also exports (sends) data to Log3. In Figure 3-26, log1-1 represents the most current 24 (hourly) logs saved to disk as historical logs.

The logs no longer on the disk are older logs which have been replaced by the more current logs.

When data is required for import from another log, it is in reference to time. Log3-1 requires data from log1-1, log3-2 requires data from log1-2, etc. However, if historical log log3-2 is demanded, the data it requires must come from log log1-2, which is no longer present on the hard disk.

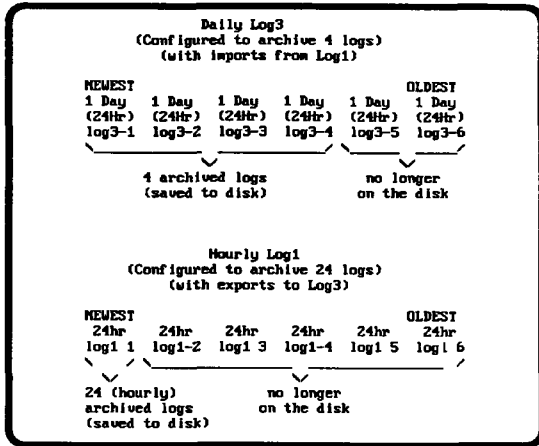


Figure 3-26 Representation of Archived Logs  
Stored to Disk

**Demand a Periodic Log**

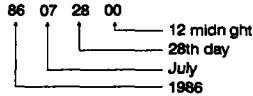
Demanding a log does not interfere with the log's automatic execution and does not alter the normal archiving scheme. At the time a log is demanded the current values of any tag references are used. If a log is normally run automatically at the end of each shift, and that log is also demanded half way through the shift, then any integration values would be the currently accumulated value. The automatic log that is run at the end of the shift will not be affected, that is it will still read in tag values that were accumulated for the entire shift.

For a log which is set up as a manual log, the historical log will still be created at the end of the log period. No printout will occur, but a print historical can be done on it after any values have been changed with Edit Historical.

To Demand a Log:

- 1) Move the cursor to highlight the log name that is desired and select either **F1** Demand Current Log, **F3** Demand Historical Log, or **F5** Demand Historical Log on Drive 1
- 2) **F1** will execute the current log as described above
- 3) **F3** and **F5** will present another display including all the data file names that are associated with this log. Move the cursor to highlight the desired historical file name

The file names are names which describe when they were created:



Move the cursor to highlight the desired log and press **F1**, **F3** or **F5**. This log will be output to the output device selected.

- F1** This function demands the printout of the currently selected log on the system printer defined for that log.
- F3** This function demands the printout of the currently selected log on the \$1pt printer device.
- F5** This function demands the printout of the currently selected log to the console.

Note that it will only export values to the database if the *export on demand* parameter is set to **yes**. However, historical files can be edited (data only) before being output to the specified device.

**Trip Retrieval**

The Trip Retrieval Menu will allow demanding of logs and plots for a particular trip group. Press from the Log Retrieval Menu to display the Trip Retrieval Menu (Figure 3-27)

1 < Trip Retrieval >				Jan 8 2 37 11 pm
01 trip_text1	02	03	04	
05	06	07	08	
09	10	11	12	
13	14	15	16	
17	18	19	20	
21	22	23	24	
25	26	27	28	
29	30	31	32	
33	34	35	36	
37	38	39	40	
41	42	43	44	
45	46	47	48	
49	50	51	52	
53	54	55	56	
57	58	59	60	
61	62	63	64	
F3 Demand Log	F4 Demand Plot			
F5 Demand Log from Drive 1	F6 Demand Plot from Drive 1			
F9 Help	F0 Exit to Previous Menu			

Figure 3-27 Trip Retrieval Menu

**OPERATION**

---

**DEMAND PLOT**

When a trip occurs due to a trigger condition being met all the information relating to the trip is stored in a file with a name equal to the time and date of the trip.

After a trip log has been automatically output to the printer the user may observe the trip data as a plot on the printer.

Press **F2** from the Post Trip Function menu to display Demand Trip Plot. Highlight the desired group using the arrow keys then pressing either **F1** or **F2**. Another menu comes up displaying the trip data files that have been accumulated

Press **F2** to display the Edit Trip Plotting Parameters. This allows the user to trend selected trip data from the chosen data file and then plot the data on a printer. Up to eight (8) tags may be plotted. Enter a time period for the plot, the time period is broken up into the number of seconds required before the trip and the number of seconds required after the trip.

The trend display displays all the entered tags in a graph format. An active cursor bar may be moved across the graph (using the arrow keys) to highlight a particular instant.

Now that the trend has been displayed on the screen the user may plot the displayed data by pressing the **p** key.

---

**DEMAND LOG**

When a trip log occurs all information relating to the trip is stored in a file with a name equal to the time and date of the trip.

Once the trip log has been automatically output to the printer the user may reprint the trip data as often as required. Press **F3** at the Trip Functions menu to display the Demand Trip Log menu. Highlight the desired group and press either **F1** or **F2** to display the accumulated trip data files. Press **F1** to output the log to the printer.

---

**GRAPHIC DISPLAYS**

Press function key **F7** from the system Main Menu to invoke high resolution graphics capabilities. The initial display will always be the graphic assigned as the display summary.

User definable graphic displays may be assigned to any of the 29 function keys through the Graphics Configurator in the Graphics Configuration Menu.:

**F1 - F10** Press **F1** - **F10** (**F9** displays a general help menu)  
(**F10** exits to the previous menu)

**F11 - F20** Hold **Shift** and press **F1** - **F10**

**F21 - F30** Hold **Ctrl** and press **F1** - **F10**

**Display Summary** Press the **5** key in the numeric key pad (**Num lock** off)

**NOTE:** Press **F9** for a graphic general help menu. This help menu provides an explanation of keys used by all sections of the Process Control system.

The **Alarm Summary** can be accessed from any graphic by pressing **ALT-A**. Pressing **ALT-P** from the Alarm Summary will return to the previous graphic display from which the Alarm Summary was called.

To exit graphic displays and to return to the Main Menu, press **F10**.

---

**Graphic Control**

By pressing appropriately defined control select keys, the user may exercise control over tag/screen operations.

---

**LOGIC CONTROL**

Logic control gives the user the ability to exercise control over these tag types: Station, Remote Control Memory (RCM), Device Driver (DD), Remote Manual Set Constant (RMSC) and Multi-State Device Driver (MSDD).

For each tag type, operator control information boxes can be displayed as follows:

1. When the box is active, the blue outline changes color to show that it is active. The **Target** prompt is displayed on the bottom line of the box.
2. When the box is active, the **Target** prompt along with the tagname (for reference) is displayed on the bottom line of the CRT on the right side. The outline of the box does not change color.

3 When the box is active, the *Target*: prompt is displayed on the bottom line of the CRT on the right side. The outline of the box changes color to show that it is active

4. If the user configures a pop up, a user selected letter for that popup appears on the screen. Key in the letter and the faceplate appears at the user-specified location.

Note that typing **F10** will exit any control operation.

### **Station Control**

The Station becomes active by keying in the control select key (as configured for the graphic) There are three options for displaying station control information to the operator One or the other must be used during display generation Note that all Function Key prompts are always available on the bottom line of the screen

When the **Station** is active, the user can use the Control keys (**F1**) through **F7**) as follows:

- F1** Setpoint changes the current value appears beside the *Target*: prompt Either type in a new number then **Enter** or use the **↑/↓** keys (slow ramp) or use the **Ctrl**-**↑/↓** (fast ramp).
- F2** Control output changes the current value appears beside the *Target*: prompt Either type in a new number then **Enter** or use the **↑/↓** keys (slow ramp) or use the **Ctrl** **↑/↓** keys (fast ramp)
- F3** Ratio index changes - the current value appears beside the *Target*: *ra* prompt Either type in a new number then **Enter** or use the **↑/↓** keys (slow ramp) or use the **Ctrl**-**↑/↓** keys (fast ramp).
- F5** Selects local or computer mode - will attempt to toggle the station mode Note that if the station is currently in local mode, a check is made to ensure the computer is alive before the computer mode is enforced.
- F6** Selects auto or manual mode
- F7** Selects auto, cascade or ratio mode.

### **Remote Control Memory, Multi-State and Device Driver Control**

The Remote Control Memory Box becomes active by keying in the control select key (as configured in the graphic).

Control works the same way regardless of which display option is used In any option, the field portion of the *Target*: prompt does not appear until an action key is depressed

The following keys are used to control Remote Control Memory and Device Driver Blocks:

- F7** Changes the selected RCM/DD to the 1 (set) state.
- F9** Changes the selected RCM/DD to the 0 (reset) state.
- F6** Changes between Automatic and Manual control of Device Driver/Multi-State Device Driver blocks

The following keys control Multi-State Device Drivers

- F9** Changes the selected MSDD to the 3 state.
- F8** Changes the selected MSDD to the 2 state.
- F7** Changes the selected MSDD to the 1 state.

---

#### **Remote Manual Set Constant Box Control**

The Remote Manual Set Constant Box becomes active by keying in the control select key (as configured in the graphic)

The current value is displayed beside the *Target* prompt Type the new number and **Enter** to make a change

---

#### **TREND DISPLAY CONTROL**

The Trend Control becomes active by keying in the control select key for any of the trend tags assigned to the trend element (as configured in the graphic) The trend tag box outline changes color to show that it is active.

The following keys are used in trend display control

- ←/→** Pan left or right 1/2 screen or to left/right of cursor if cursor is not in the home position (far right)
- PgUp** Displays trends for a doubled period of current time range with a doubled display resolution compared to the previous displayed element. This shrinks the trend curve.  
**Zoom Out**
- PgDn** Displays trends for a half period of current time range with a half of the display resolution compared to the previous displayed element. This magnifies the trend curve Starting from the display resolution equal to the collection resolution, pressing the **PgDn** key displays a half period of time compared to the previous displayed element but with the same display resolution on the whole available displayed area for that element.  
**Zoom In**
- ←/→** Move time cursor left or right by one sample
- Ctrl - (←/→)** Move time cursor left or right by 10 samples

- Home** Home time cursor to far right of trend display or return trend display to current time if cursor already home.
- End** Move cursor to far left of trend display.
- F1/F2** Change the high/low limit of the selected trace. The trend will be redrawn to reflect the new limit.
- keypad ~** Press this key to bring up a time/date field. Enter the desired time and date and press **Enter**. This causes the trending subsystem to display trend data for this time/date.
- Pan**
- keypad \*** Press this key to bring up the zoom field. Enter the desired zoom factor and press **Enter**. Positive value zoom out, negative values zoom in. The zoom factor is equivalent to pressing the corresponding zoom key **PgUp/PgDn** that many times.
- Zoom**
- F10** Exit control (leave trend as is).
- Esc** Exit control (return to current time and default resolution)
- The following keys are available when no element is in control:
- Ctrl-p** Print a hardcopy of the graphic display.
- Ctrl-g** Toggle on/off the trend elements background grids.
- keypad +** Acknowledge alarms on the current display

---

**UTILITIES**

Press **F8** from the system Main Menu to display the Utilities Menu. Utilities are:

- F1** Backup/Restore
- F2** Log Utilities
- F3** Disk Utilities
- F5** System Diagnostics
- F6** Trend Monitor
- F7** Enable/Disable Alarm Printing
- F8** Enter Time and Date

---

**Backup/Restore Configuration**

The Backup/Restore configuration utility is selected by pressing **F1** from the Utilities menu. This utility provides three functions:

- F1** Backup configuration
- F2** Restore Configuration
- F4** Load MCS Tag Database Files

---

**BACKUP CONFIGURATION**

Press **F1** to backup the system configuration onto 1.2 Mbyte floppy diskettes. The number of diskettes required vary because the configuration consists of dynamic files which vary in size. Insert the first disk in drive 1 and press **F1**. The configuration files will be copied to the disk. If the first disk fills prior to all of the files being copied, the user is prompted to insert a second disk, and is asked if this disk should be formatted. This process will continue until all system configuration files have been copied to a disk.

---

**RESTORE THE SYSTEM CONFIGURATION**

Press **F2** to restore the the system configuration. A message appears instructing the user to insert the first configuration disk in drive 1 (the top floppy disk drive). After the diskette is inserted, press **F1** to continue with the restore or **F10** to exit. A restore only loads graphic.dt files. Therefore, all graphics must be reconverted.

---

**LOAD MCS TAG DATABASE FILES**

This system uses the same tag database structure as the Management Command System (MCS). The MCS database is created using dBase III plus. These files are converted to MCS database files (\*.cf) using the SLDG package (refer to Bailey Product Instruction E93-916-1B). The SLDG package

is also used to shrink a larger MCS database to the appropriate size used by this console ( the user may select the tags to be transferred). This utility loads all MCS database \* cf files from the user defined source drive and directory

To copy MCS tag database files into the system, type the complete drive and directory path and press **F1** When referring to a DOS drive and path, use a forward slash (/), not the backslash (\) as in DOS.

**NOTE:** Type only the drive and path, **NOT** the filename

**Example:** **a:/** DOS drive A: at the root directory  
**a:/database** DOS drive A: at the database directory  
**c:/ews/db** DOS drive C: at the ews/db directory

**NOTE:** All MCS DB files are used by the system **EXCEPT** the trend cf file as the MCS uses distributed trending and this system uses exception report trending Refer to **TREND TAG CONFIGURATION** in this section

---

### Log Utilities

Press **F2** from the Utility Menu to select the Log Utilities Menu This menu allows the user to backup archived files of Periodic Logs and Trip Logs

**F1** Periodic

**F2** Trip

Pressing **F1** from the Log Utility Menu provides functions for backing up archived Periodic Log data files to a disk Pressing **F2** from the Log Utility Menu provides functions for backing up archived Trip Log data files to a disk

---

### Floppy Disk Utilities

Press **F3** from the Utility Menu to select the Floppy Disk Utilities. Four utilities are provided

**F1** Format Low Density Diskette

**F2** Format High Density Diskette

**F3** Diskette Utilization

**F4** Hard Disk Utilization

Press **F1** from the Floppy Disk Utilities menu to format a low density (360 Kbyte) diskette. This utility prepares a low density diskette for system use Insert the diskette in drive 1 (the top floppy disk drive) and press **Enter** If no format is desired, press **F10**.

Press **F2** from the Floppy Disk Utilities menu to format a high density (1.2Mbyte) diskette This utility prepares a high

density diskette for system use. Insert the diskette in drive 1 (the top floppy disk drive) and press **[Enter]**.

If no format is desired, press **[F10]**.

Press **[F3]** from the Floppy Disk Utilities menu to check disk utilization, or **[F4]** to check hard disk utilization. Insert a floppy diskette in drive 1 (the top floppy disk drive) to check for disk free space. The quantity of free space left is printed to the screen. If a disk check is not desired, press **[F10]**.

**System Diagnostics**

Press **[F5]** from the Utilities Menu to access the System Diagnostics menu. This menu provides four functions:

- [F1]** Diagnostics
- [F2]** System Messages
- [F4]** System Status
- [F5]** System Activity

**DIAGNOSTICS**

Press **[F1]** from the System Diagnostics menu to view the System Monitor diagnostics display (Figure 3-28). This display enables the user to determine at a glance how well the system is performing.

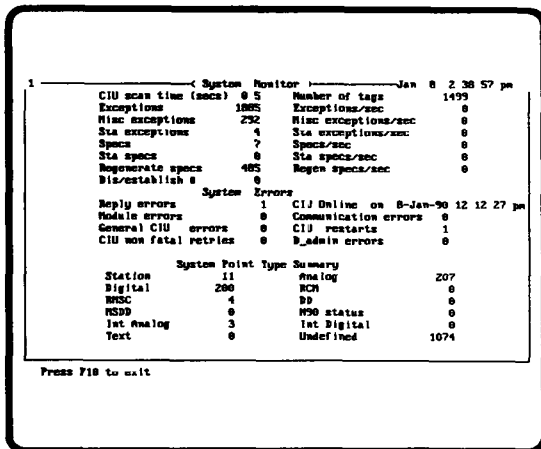


Figure 3-28. System Monitor Diagnostics Display

---

**SYSTEM MESSAGES**

Press **F2** from the System Diagnostics menu to view the System Message Summary. Messages and errors created from system files are listed to the screen. Press any key to page through the listing, or **F10** to exit.

---

**SYSTEM STATUS**

Press **F4** from the System Diagnostics menu to select the System Status. This function is used to verify that all the system background tasks are running. If all the required tasks are running the message all system tasks are running is displayed. Messages are displayed for each task which is not running.

**NOTICE**

**Do not leave the computer off for more than 15 seconds. The lowest log calculation resolution is every 30 seconds. Loss of data could occur.**

If any task is not running, turn off the computer, wait approximately five seconds, then turn the computer on.

Check System Status again by pressing **F4** from the System Diagnostics menu. If the message *all system tasks are running is not displayed*, call your nearest Bailey Service representative.

---

**SYSTEM ACTIVITY**

Press **F5** from the System Diagnostics menu to view the System Activity bar chart (Figure 3-29). A total of 16 priority levels are available in QNX. An idle task runs at priority F. Normally the system will have a large amount of idle time. If any priority, other than the idle task at priority F, constantly shows a loading in excess of 75%, contact your nearest Bailey Controls Service Office.

---

**Trend Monitor**

Press **F6** from the Utility menu to display the Trend Monitor screen (Figure 3-30).

This display enables the user to determine at a glance how the trend collection system is reporting. Trend summary information appears at the top of the display, indicating the amounts of trend tags which are assigned at the various collection intervals, and a calculated idle time which indicates processor loading. The lower half of the screen displays collection information for each trend tag. Press **PgUp**, **PgDn**, **Home**, **End** to scroll through all assigned trend tags (refer to Trend Tag Configuration for information on assigning trend tags).

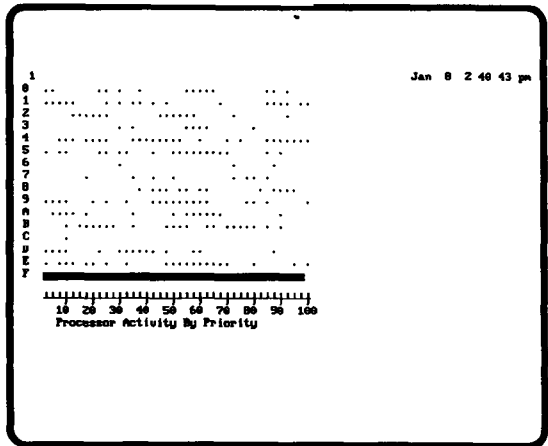


Figure 3-29. System Activity Bar Chart

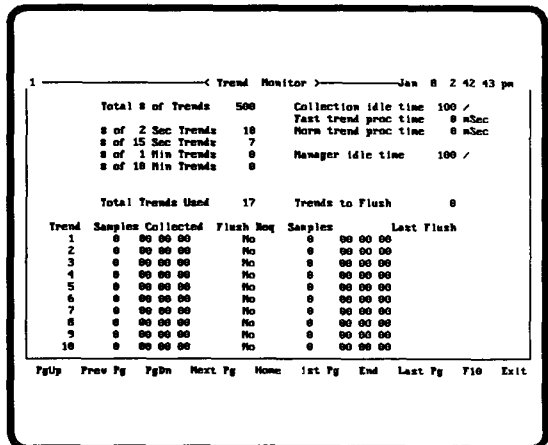


Figure 3-30 Trend Monitor Screen

**Enable/Disable Alarm Printing**

Press **(F7)** from the Utilities Menu to toggle the printing of alarms on or off

**Enter Time and Date**

Press **(F8)** from the Utilities menu to access the Set System Time and Date utility (Figure 3-31)

Use the arrow keys to move to the desired location in each date field Press **(F1)** to set the system hardware clock

```

1 < Set System Time and Date > Jan 9 2 38 56 pm

Enter Time and Date
YY MM DD HH MM SS
98/1 / 2 2 38 0

F1 Set System Date
F0 Exit to Previous Menu
  
```

Figure 3 31. Set System Time and Date Display

---

**LOGOFF SYSTEM**

If password security was invoked during installation, an added selection **[F10]** is found on the the system Main Menu. Press **[F10]** from the Main Menu to logoff the system. Once logged off, only users with a predefined User ID and Password may enter the system. The User ID and Password must have been entered during the initial installation. The User ID is entered at the Login prompt. Obtain the Login prompt by pressing **[Ctrl]-[Z]**. (The first time the system is brought up, press **[Ctrl]-[d]**, then **[Ctrl]-[Z]**). Type the User ID at the *Login:* prompt, and the password at the *Password* prompt.

**NOTE:** The User ID and Password are case sensitive. For example, the passwords

operator and opErator

are two distinct passwords. Be sure to use the required case



## SECTION 4 — EXTENDED RIPCAM FUNCTIONS

### ENTERING TAGS

The model files produced by RIPCAM for use as log formats may include all standard RIPCAM cell types (refer to RIPCAM manual). In addition to these standard features several extended functions are provided. These functions are not directly available in RIPCAM but rather are provided by the calculation executive task; and define how live data collection is performed. The functions are entered into RIPCAM as text strings outside of the main log area. (The main log area is defined in the Log Parameters screen). The character of the string being an ASCII @, distinguishes these text strings from regular text. The system will search the RIPCAM log model file for strings with this character, and parse the remaining text.

#### Syntax:

**tagname, extended function [,option] [,option] [,etc]**

#### where:

- cell**            The cell number to be used by the extended function (i.e., A12, G45 or AB250)
- tagname**        The tag name of the system database point used by the desired extended function. This tag **MUST** be defined in the tag database
- extended function**    The required syntax for the extended RIPCAM function desired. Available extended functions are
- Calculation Types  
Dating Functions
- option**            An extended function option. The result of this option is dependent on the extended function used. All options are used to change default values as set in the log parameters. Options are:
- Error Mode  
Calculation Period  
Calculation Period Delay  
Calculation Sample Rate

---

**CALCULATION TYPE EXTENDED FUNCTION**

The Calculation Type indicates to the calculation executive what type of operation should be performed on the calculation. If no type is specified, the default type is Live.

**Syntax:** @cell = tagname, type [,option] [,option] [,etc]

Valid types:

<b>Live</b>	Use current value from data base at the end of the calculation period.
<b>INtegration</b>	Integrate the source point over the calculation period.
<b>Average</b>	Average the source point over the calculation period.
<b>Minimum</b>	Use the Minimum value sampled over the calculation period.
<b>MAXimum</b>	Use the Maximum value sampled over the calculation period.
<b>IMport</b>	Import the selected tag from the database. This type is similar to Live in that a value is read from the database. It should be used when the imported tag is one which is exported from another log. Edit Historical data requires this type be used rather than Live in order to recalculate a past log.
<b>EXport</b>	Export the selected cells value to the indicated tag at the end of the log period.

*Live Values Calculation Type*

The Live values calculation type stores the current value from the data base at the end of the calculation period to the desired cell.

**Syntax:** L

where:

L                    Live calculation type.

**Examples:** The function:

@B7=PARA01,L

is an example of the Live calculation type. The present or live value of tag PARA01 will be stored in cell B7. The L is optional since The system defaults to Live.

@B8=341-AI-438B1,L

@B9=APROD,L

@B10=J11127,L

Please note that calculation strings are stored in cells outside of the main log area and entered into these cells as text strings (Figure 4-1).

**Integration Calculation Type**

The Integration Constant is used to scale down the integrated value in order to present the value in some known unit of measurement.

**Syntax:** IN, R=rate[S][M][H], S=scale

where

**IN** Integration Constant type.

**R=rate[S][M][H]**

**S=scale** The scaling factor. This value is multiplied by the tag value AFTER integration.

**Examples:** @F7=PARA01,IN,R=2M,S=.0333

@F8=341-AI-438B1,IN,R=2M,S=.0333

@F9=APROD,IN,R=2M,S=.0333

@F10=JI1127,IN,R=2M,S=.0333

In these examples, the system will integrate each tag every two (2) minutes and multiply the value by .0333. In the case of an hourly log, samples at two (2) minute intervals will produce 30 samples,  $1/30 = .0333$

An Hourly calculation sampling at a rate of once per minute, could use a constant of  $1/60$ , or 0.01666, to produce the units **wigits/hour**. This option is only valid for Integration type calculation and will be ignored by all other types. The default is 1.0

**Average Calculation Type**

The **Average** calculation type, averages the values of the tag over the log period and places the averaged value into the specified cell.

**Syntax:** A

where:

A Average calculation type.

**Examples:** @D7=PARA01,A

@D8=341-AI-438B1,A

@D9=APROD,A

@D10=JI1127,A

Cell D7 will get the average value of tag PARA01. If this log is a shift log, the value of PARA01 will be averaged over the shift. At the end of the shift the average value will be stored in cell D7 and the log will be printed. The average will show on the log print out, but in a Display of the tag PARA01, the live value will be seen. In order for the average of tag PARA01 to be seen in a display the user must export the tag.

@D7=PARA01AV,EX

The value of cell D7 will be exported to an internal tag PARA01AV. PARA01AV could then be used on a display.

---

**Minimum Value Calculation Type**

The Minimum value calculation type stores the minimum tag value sampled over the calculation period in the desired cell

**Syntax:** MI, R=rate[S][M][H]

where:

**MI** Minimum value calculation type.

**R=rate[S][M][H]** Determines the rate at which the tag value is sampled. This rate may be any positive integer. The rate is interpreted as seconds, minutes or hours when followed by an S, M, or H respectively.

**Example:** K9=SYSTAG17,MI,R=2M

In the above example, the minimum value of the tag SYS TAG17, during a two minute time span, is stored in cell K9

---

*Maximum Value Calculation Type*

The Maximum value calculation type stores the maximum tag value sampled over the calculation period in the desired cell.

**Syntax:** MA, R=rate[S][M][H]

where:

**MA** Maximum value calculation type.

**R=rate[S][M][H]** Determines the rate at which the tag value is sampled. This rate may be any positive integer. The rate is interpreted as seconds, minutes or hours when followed by an S, M, or H respectively.

**Example:** @K9=SYSTAG2,MA,R=2M

In the above example, the maximum value of the tag SYSTAG2, during a two minute time span, is stored in cell K9

**Export And Import Calculation Types**

Exports and Imports are used to send and receive data from one log to another.

Syntax: **EX**

**IM**

where

**EX** Export calculation type

**IM** Import calculation type

Export Example: A example of an Export function is:

**@L2=TAG01PS,EX**

In this example, the value of cell L2 is exported (sent) to tag TAG01PS. This tag **MUST** be defined in the tag database as an internal tag type (When tags are defined as an internal, the user does not have to give the tag a PCU, MODULE, or BLOCK address)

This internal value can then be used in this log or later logs (i.e. if this is log 2, the exported value can be used in log 2 to 64 inclusive, but not log 1).

**NOTE:** The Export function can also occur with an RMSC tag type to send a calculated value to the plant loop. Refer to How to Export Calculated Values to the Plant Loop in the Extended RIPCAM Functions section of this manual.

Import Example: An example of an Import function is:

**@M3=TAG77,IM**

In this example, the internal value of tag TAG77 is imported (received) by this log, and placed in cell M3. This value **MUST** have been exported by a previous log (i.e. if this is log 10, any log between log 1 and log 10 must have exported this value)

**DATING EXTENDED FUNCTIONS**

The dating functions place a date in the desired cell for the period in which the data was collected.

**Syntax:** @cell = tagname, dating function, ER=D

Valid dating functions are:

<b>SOM</b>	Second of minute
<b>MOH</b>	Minute of hour
<b>HOD</b>	Hour of day (0-23)
<b>SOD</b>	Shift of day (defined in General Log Definitions, the first shift being zero)
<b>DOW</b>	Day of week (0-6)
<b>DOM</b>	Day of month (1-31)
<b>WOY</b>	Week of year (1-52)
<b>MOY</b>	Month of year (1-12)
<b>YOC</b>	Year of century (since 1900 A D)

These tag types will return an integer number into the specified cell. A tag name must be specified only to follow the format of calculations, but will not be affected by a calculation.

**Examples:** @G1=HOUR, HOD, ER=D

Stores the hour of the day in cell G1 when the log runs

@G2=DAY, DOM, ER=D

Stores the day of the month in cell G2 when the log runs.

@I1=MONTH, MOY, ER=D

Stores the month of the year in cell I1 when the log runs

To use the above examples, the user must include in the database as internals the following tag names:

HOUR  
DAY  
MONTH

If the user wanted to change values (i.e. change hours of day from 23 to 24) the calculation would be written as:

@G1=HOUR, HOD, ER=D

then in cell G2 type in the address of the calculation plus 1 (i.e. G1+1). Then 1 would be added to the hour.

---

**ERROR MODE OPTION**

The Error Mode indicates to the calculation executive what action to take in the event the source tag becomes bad quality. If the mode is not specified, the default mode is Ignore

**Syntax:** **ERror = mode**

Valid modes:

- |                |  |
|----------------|--|
| <b>Ignore</b>  | Ignore the samples during which the tag is bad.                                      |
| <b>Default</b> | Process the sample normally using the default value from the data base               |
| <b>Error</b>   | Force the calculation into error by setting the current value to a very large number |

**Examples:** **@B18=SAMPTAG,A,ER=E**

This calculation tells the calculation executive to flag the calculation result as bad if the tag is bad.

**@D18=SAMPTAG,A,ER=D**

This calculation tells the calculation executive to use the default value if the tag is bad

**@F18=SAMPTAG,A,ER=I**

This tag calculation indicates that if the source tag becomes a bad quality, ignore the sample

## CALCULATION PERIOD OPTION

The Calculation Period specifies the period over which the collection is to occur. If this parameter is not specified, the period of the log as specified in the log parameters is used. By using this parameter, a log which consists of various periods can be created. If a period longer than the log period is specified, the accumulated value is carried over to later log periods. This feature allows for such log items as year to date values, motor run times, etc.

**Syntax:** **Period = type**

**Valid types:**

**Hourly**  
**Shift**  
**Daily**  
**Weekly**  
**Monthly**  
**Yearly**  
**None**

**Example:** @B20=WQI104,A,P=HOURLY

Cell B20 will contain an average of tag WQI104 over the first hour of the log period

**Calculation Period Delay Option**

The Calculation Period Delay specifies the number of calculation periods to delay before starting the collection. Valid delays depend on the calculation period and the log period. The default is (0) which indicates no delay. This parameter provides calculations such as daily totals on a weekly log, or monthly totals on a yearly log.

Syntax: **Delay = #** or **Period Delay = #**  
 (D=) (PD=)

where:

# positive integer.

Valid delays:

Log Period	Calculation Period	Valid Delays
Shift	Hourly	0 to 11
Daily	Hourly	0 to 23
Daily	Shift	0 to 2
Weekly	Daily	0 to 6
Month	Daily	0 to 31
Year	Weekly	0 to 51
Year	Monthly	1 to 12

Examples: (regular delays)  
 @H10=AI3019Z, A, D=23, P=HOURLY  
 @H11=AI3001F, A, D=2, P=SHIFT  
 @H12=AI3019F, A, D=4, P=DAILY

Cell H10 will contain an average of tag AI3019Z and the value will be stored at hour 23. Cell H11 will contain an average of tag AI3001F storing the value in the 3rd shift. Cell H12 will contain an average of the tag AI3019F in a weekly log storing it in the 5th day.

Examples: (period delays)  
 @I10=AI3019Z, A, PD=23, P=Hourly  
 @I11=AI3001F, A, PD=2, P=Hourly

Cell I10 (in a daily log) will contain an average of tag AI3019Z and the value is stored for the 24th hour in the day (based on a defined end of day). Cell I11 (in a shift log) will contain an average of tag AI3001F for the 3rd hour in the shift (based on a defined shift length/end of day)

Refer to the delay overview chart for a summing of all possible delay calculations.

**NOTE:** The delay option is not available for imports

**EXTENDED RIPCAM FUNCTIONS**

**Delay Overview Chart**

Calc Period (P=Hourly)	HOUR		SHIFT		DAY		WEEK		MONTH		YEAR	
	D	PD	D	PD	D	PD	D	PD	D	PD	D	PD
Hourly	X	X	HOD 0-23 HOD 0-11		HOD 0-23 HOD 0-23		X	X	X	X	X	X
Shift	X	X	X	X	SOD 0-2		SOW 0-20		SOM 0-95		X	X
Daily	X	X	X	X	X	X	DOW 0-6 (SUN = 0)		DOM 1-31		X	X
Weekly	X	X	X	X	X	X	X	X	X	X	WEEK OF YEAR 0-51	
Monthly	X	X	X	X	X	X	X	X	X	X	MONTH OF YEAR 1 12	
Yearly	X	X	X	X	X	X	X	X	X	X	X	X

**NOTES.**

LOG PERIODS D = Regular Delay PD = Period Delay

X - denotes inval d log period/calculation period combination

HOD Hour of Day

HOS Hour of Shift

SOD Shift of Day

SOW - Shift of Week

SOM Shift of Month

DOW - Day of Week

DOM Day of month

HOD 0-23 offset from defined end of day

SOD 0-2 offset from defined shift of day

SOW 0-20 offset from defined end of week

SUN Sunday

**Calculation Sample Rate Option**

The Calculation Sample Rate specifies the rate at which the calculation executive should run the calculation. If this parameter is not specified, the default sample rate is based on the period of the log, as specified in the log parameters. The default sample rate will be calculated as follows.

**Syntax:** Rate = type

Valid types:

30 SECONDS  
 1 MINUTE  
 2 MINUTES  
 10 MINUTES  
 30 MINUTES  
 1 HOUR

**Examples:** @B16=A13001F,A,R=30SEC

@D16=A13001F,A,R=2MIN

@F16=A13001F,A,R=10MIN

If a rate is not specified, default parameters are used

<b>Log Period</b>	<b>Default Sample Rate</b>
Hourly	30 Seconds
Shift	1 Minute
Daily	2 Minutes
Weekly	10 Minutes
Monthly	30 Minutes
Yearly	1 Hour

**RELATIVE ADDRESSING**

Relative addressing is an alternative means of specifying the destination cells. Examples are:

**@[-8,0]=341-AI-438B1,MA,R=2M**

**@[-8,0]=341-AI-438B2,MI,R=2M**

Assume the first function above is stored in cell L19. At the end of the log period the maximum value of the tag will be stored eight (8) cells to the left of cell L19 ( $L19 - 8 = D19$ ). The rate of the calculation is every two (2) minutes. If the log is a shift log, the system will examine the value of the tag every two (2) minutes and keep the maximum value. At the end of the shift the maximum value will be stored in cell D19.

---

**HOW TO ADD DATE AND TIME TO A LOG**

Two functions are available to **add the date** and time to a log.  
The functions are:

Syntax: **DATE()**

**\$TIME()**

where:

**\$DATE()**

This function will put in the current cell the current system date as an eight (8) digit character string in international format

**YY/MM/DD**

Move the cursor to the cell where the date is desired, select text mode by pressing the shift and " (double quote) keys at the same time, and enter **\$DATE()** in capital letters.

**\$TIME()**

This function will put in the current cell the current system time (the time the log is run) as an eight (8) digit character string in international format.

**HH.MM:SS**

Move the cursor to the cell where the time is desired. Select text mode by pressing the shift and " (double quote) keys at the same time, and enter **\$TIME()** in capital letters.

---

**HOW TO EXPORT CALCULATED VALUES TO THE PLANT LOOP**

---

Actual tag values from the INFI 90 system are read by the Logging system, and used in calculations to create calculated values. If a calculated value is Exported by a log to a tag with an Internal tag type, it can be used on other logs or displays within the system it was created in only.

In order for the calculated value to be sent to the plant loop for other PCUs and operator consoles to use, an Exception Report must be generated on the Plant Loop each time the calculated value changes. A method is provided for generating this Exception Report.

---

**Requirements**

A Remote Manual Set Constant block must reside in a PCU on the loop, and must be defined in the system tag database with a RMSC tag type. For this discussion, assume the tag name chosen for this RMSC tag is RMSCTAG

A log must generate a calculated value and place this value in a cell of the spreadsheet. For this discussion, assume the calculated value is placed in cell L2.

To export this calculated value, the following extended RIPCAM function must reside in the log

**@L2=RMSCTAG,EX**

This function will Export the calculated value from the log to the RMSCTAG tag. Because this tag is a Remote Manual Set Constant, this in turn transfers the calculated value to the tag in the PCU where it resides. If this changes the value of this tag, an Exception Report will be generated. The Exception Report is then sent to the Plant Loop, and is available to other PCUs and operator consoles.

---

**LOG SIZING AND DESIGN**

Here are some considerations to keep in mind when laying out a log

- The maximum width of a log is limited to 256 characters by RIPCAM. However, most printers cannot print that many characters on one line. Check your printer's user's guide before deciding on a log layout.
- A log consists of two areas: the log area to be printed (as defined in Edit Log Parameters) and the area where the calculation definitions reside (anywhere else) (Figure 4-1).

Since the calculation definitions (where tag names and logging options are specified) tend to be long lines, it may be worthwhile to increase the cell size of this area to a value other than 8 (the default cell width) to say 20, or 30. This way, each definition will encompass only one column. This will make for a neater log, easier and faster horizontal scrolling, and make a lot more room to define many more calculations.

## HOW TO COMPUTE 'SMART' AVERAGES

There are many instances where you may want to calculate the average of several cells in a log. Assume calculations are entered into the cells A and X of the spreadsheet:

A	X
1 (value 1)	IF(A1=0),1,0)
2 (value 2)	IF(A2=0),1,0)
3 (value 3)	IF(A3=0),1,0)
4 (value 4)	IF(A4=0),1,0)
6 SUM(A1,A4)/SUM(X1,X4)	

Where cell A6 contains the smart result.

Problems arise when some cell(s) have zero or erroneous (error) values in them. Of course, a straight average will yield incorrect results. One way around this problem is to define another array of cells (X1 to X4 in the example above) Each one corresponding to one of the cells to be included in the average (A1 to A4 above). These auxiliary cells contain a test that returns 1 (one) if the associated cell is valid and 0 (zero) if the cell is 0 (zero) or invalid (error). Then the average is calculated (A6) as the total of all the values (A1 to A4), divided by the total number of valid values (total of X1 to X4).

---

**PRINTER CONTROL BY A LOG**

In many instances, it is desirable to perform printer setup controls from within a log. For instance, an unusually wide log may require the printer to be setup for compressed-pitch printing. Or, you may like your printer to do a formfeed before printing each log to make sheet separation easier.

In **RIPCAM** any characters preceded by \ (reverse slash) will be interpreted as hexadecimal codes and will not be displayed; only sent to the printer.

---

**Form Feeds**

To force the printer to do a form feed before printing your log, simply type `\0C` (\zeroC) (that is hexadecimal for 12) or `\8C` (in some cases), as a text cell in A1.

To do another form feed after the log printout, put `\0C` or `\8C` (in some cases) in the last (lower right corner) cell.

---

**Compressed Printing**

To select compressed printing mode (typically 17 cpi) on an NPRT02 or similar printer, simply type (or add) `\0F` as a text cell in A1. In the last cell of the log, type `\12` to exit the compressed mode. Cells containing such control characters can be **HIDDEN** (not displayed by the RIPCAM spreadsheet used to edit historical data)

If the printer is shared by other users or system tasks, it may be good practice to initialize the printer to its default setup before printing each log. On an NPRT02 type printer, this is done by issuing `\1B \40`. Make sure you do a form feed before, though, as this command resets the top-of-form on the printer.

Other printer setup possibilities include italics mode, line spacing, double strike, bold face, expanded print, super and subscript, etc.. Refer to the printer manual for required codes.

**HOW TO DISPLAY MESSAGES AND WARNINGS**

It is sometimes useful to print a string of text on a log depending on the outcome of a test. For instance, suppose one of the values in the log is power consumption for the period, and it is desired to have a line appear at the bottom of the log that would read:

*Warning: Power Consumption is Unusually high*

This could be done as follows:

The cell where the message is to appear should contain: **\$SWCH (true string, false string)** This cell would display **false string** if it is given a value of zero or error, and display **true string** if the value is one or higher.

The cell is given its value (LOADED) by another cell containing **LOADD (cell,exp)**. Where cell is the cell address of the cell which contains the **\$SWCH** function, and exp is the value (expression,another cell address.. ) to send to the cell addressed. Alternately one may wish to print an arrow or a star (\*) next to, over, or under range values in the log, to attract the readers attention.

---

**IMPLEMENTATION OF LONG TERM LOGS**

The implementation of short term (hourly, shift, and daily) logs is simple and straight forward. All the logs obtain their data directly, and calculations are performed by each individual log. That is, all the tags in a given daily log are values read from the Infi 90 system and either averaged, totaled, scanned for a minimum, maximum or for a single value - all this over the log period of one day.

Long term (weekly, monthly, and yearly) logs require slightly more planning. Of course these long term logs can be configured in exactly the same way as the shorter-termed logs. In this case, a monthly log would scan individual values over a period of one month. A yearly log would perform its calculations over the full year. The problem with this approach is that the log data cannot be edited before the log period is over. For instance, a mid-year field sensor problem which causes erroneous data to be logged for a few hours or days cannot be edited or adjusted until the yearly log is ready, six months later. The user would then edit the log to correct the problem, then demand a reprint.

Another approach is to base the longer-termed logs on data gathered by the shorter-termed logs. For instance, a monthly log can get its data from one or more daily logs.

In such an arrangement, the daily log would gather data over a period of a day, then EXPORT the results at the end of the day. The next day, the same daily log would read (live) data from the previous day, add the data for the current day and EXPORT the total to the next day again. This provides month-to-date calculations. Simple mechanisms should be included to ignore the previous day's data on the first day of the month, therefore resetting the calculations.

Then on the last day of each month, the monthly log will run and read (live) the data EXPORTED by the daily log of the same day.

To illustrate the advantages of this approach, suppose the date is Jan 20 and a flow sensor broke down for 3 hours on Jan.15. Of course, the daily total volume for the Jan 15 log will be inaccurate, and so will the monthly reading. To correct the inaccuracy, the user, simply needs to recall the Jan.15 daily log and adjust the appropriate values. This log can then be reprinted and distributed. Then the daily logs for each successive day can be corrected via fixing live accumulated values (and reprinted) to include the change. The monthly log will then read the corrected values automatically.

---

**IMPLEMENTATION OF LONG TERM LOGS**

and print a correct report. Similarly a yearly log would not have been affected.

When EXPORTING a tag from one log for simultaneous IMPORT by another log, it is important that the EXPORTING log have a lower (numerical) position in the log list (such as seen on the LOG CONFIGURATION menu) than the IMPORTING log. For example, LOG 7 could read data from LOG1 through LOG 6 only.

If this order is not observed, then the IMPORTED value will not be one EXPORTED at the same period, but rather the value EXPORTED at the end of the previous period. This is because individual logs are processed in numerical order.

**Example Of Implementation Of A Long Term Log**

This shows how a monthly log can get its data from a daily log so that the values can be edited at any time. The first log, the DAILY LOG, imports the current monthly total and alters its value daily. While the second log, the MONTHLY LOG, imports the monthly total for report purposes

1. You must first have a method of reading the date into your log(s). One method is explained in Appendix C, Setting the QNX clock with the Infi 90 time and date.

Complete this setup before going to step 2

2. In the tag database create the following tags (if required)

Tag Name	Description	Loop	PCU	MOD	BLK	Type
TOTALM	Monthly Total	0	0	0	0	nt Analog
TOTALD	Daily Total	x	x	x	x	Real Value
N90DAY	Numerical Day	x	x	x	x	Real Value

(x is a system dependent value)

3 The DAILY LOG would contain the following similar cell configuration.

	A	B	C		Q
1	0			...	@A1=TOTALM L
2	0 00				@A2=N90DAY L
3	IF(A2=1,0 A1)				
4	0 00				@A4=TOTALD A H 2M
5	SUM(A3 A4)				@A5=TOTALM EX

Cell Q1 states that the numeric cell A1 is to display the current value of the internal tag TOTALM

Cell Q2 states that the numeric cell A2 is to display the live value of N90DAY, the numeric date of the month

Cell A3 will contain the current monthly total to date. If the current date (in cell A2) is the 1st of the month (the value 1) then the total is 0, else the total is the value in cell A1

Cell Q4 states that the numeric cell A4 is to display the daily calculated total. In this example we are taking the value averaged over a two minute sample period





## APPENDIX A — CIU HARDWARE SETUP INFORMATION

### OVERVIEW

This system communicates with the INFI 90 system through the Computer Interface Unit (CIU), and is connected to the CIU as shown in Figure A-1.

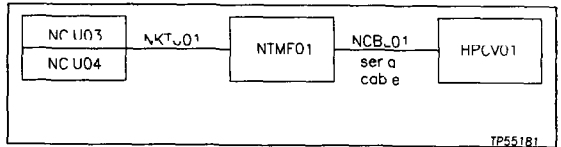


Figure A-1. CIU Cable Connections

### CIU

The CIU hardware dipswitch settings are factory set and should not require further configuration. The required settings are:

- ROM checksumming on
- 8 data bits
- 1 stop bit
- no parity
- all ports act as serial ports for connection to a host (computer)
- modem password protection off
- port addressing off
- checksumming on
- primary LSM
- 9600 baud(500 tag version)
- 19.2K Baud(1500 tag version)

If changes are required, refer to the CIU Hardware Manual (Product Instruction E93-905-2).

23 09 37 04 10 07

**Bailey**

---

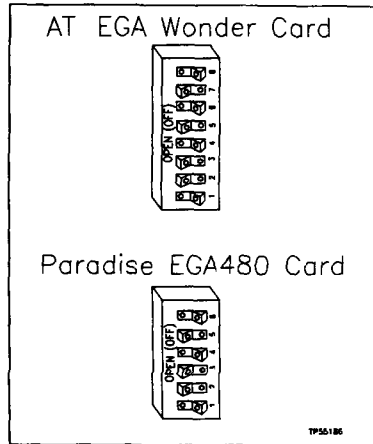
---

1-E96-711A

## APPENDIX C — PCV HARDWARE CONFIGURATION

### EGA480 CARD SWITCH SETTINGS (Bailey P/N 1948493\_5)

PCV takes advantage of the high resolution capabilities of a 640x480 EGA card to generate graphics. This graphics card is factory set and should not require further configuration. The required settings (as viewed from the rear of the computer) are:



23 09 29 04 10 07

**Bailey**

---

---

I-E96-711A

---

## APPENDIX E — SETUP INFORMATION

---

<b>PCV revision number</b>	
<b>PCV serial number</b>	
<b>GNX partition number</b>	
<b>DOS partition number</b>	

21 08 41 04 10 07

**Bailey**

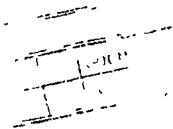
25 00 42 04 10 07

revised

---

1-899 7115

---



Form 1-200-7114 Lists in U.S.A. 200  
Copyright © 2000 by Elcom Group, An Unpublished Work  
\* Registered Trademark of Elcom Group  
\* Trademark of Elcom Group

For a complete list of licensees, representatives and affiliates in over 50 countries worldwide, contact

**Bailey Controls Company**

29801 Euclid Avenue • Wickliffe, Ohio 44092 U.S.A. • (216) 585 8500  
Telex: 980621 • Telefax: (216) 585 8756 or (216) 943 4609