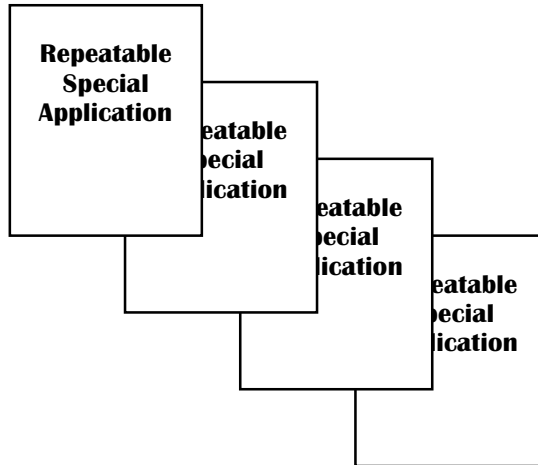


# Repeatable Special Notes



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Honeywell Inc.  
Industrial Automation and Control  
TotalPlant® Application Center  
Power Applications Center - Americas  
Power Management Applications  
16404 North Black Canyon Highway  
Phoenix, Arizona 85023

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May 8, 1995

Valued Honeywell Customer,

The following pages of this pamphlet briefly describe the capabilities of eleven **“Repeatable Special” application software packages**. If you will take a few minutes to review the descriptions of these “Repeatable Special” software packages, you may be pleasantly surprised at the **range** and **power** of these **low cost** optional enhancements to your **Honeywell TDC 3000<sup>x</sup>** system.

“Repeatable Special” software packages are non-standard products which are designed, implemented, documented and packaged for repeated use, on a wide spectrum of monitoring and control systems. A “Repeatable Special” usually originates as a “custom special” which is designed, implemented and documented to fill the needs of a specific customer. If the “custom special” has sufficient general appeal, the “custom special” is packaged for sale as a “Repeatable Special”. Because much of the development cost of “Repeatable Specials” is expended during the “custom special” phase of development, “Repeatable Specials” are made available to our customers at **significantly reduced cost**. “Repeatable Specials” exhibit the same high quality as Honeywell standard products. The User Manual for a “Repeatable Special” is designed for users who are inexperienced with the package. “Repeatable Special” software packages are warranted and supported on an ongoing basis.

“Repeatable Special” software packages are currently in use on hundreds of **Honeywell TDC 3000<sup>x</sup>** systems monitoring and controlling process industries throughout the entire world.

Your Honeywell representative will be pleased to supply information on pricing and availability of each “Repeatable Special” software package. If you require more detailed information on the function of a “Repeatable Special” software package, this information can also be supplied by your Honeywell representative.

Thank you,

Jean Morris, Manager  
Power Management Applications



## Repeatable Special Notes

RSN-01

### Alarm Point Schematic Initiation

#### Introduction

The Alarm Point Schematic Initiation Package is a software package which runs on the Universal Stations (US and U<sup>X</sup>S) of the **Honeywell TDC 3000<sup>X</sup>** system and provides automatic navigation from any of the TDC 3000<sup>X</sup> standard alarm displays to the appropriate associated schematic display.

**Note:** When used on the Universal Station<sup>X</sup>, this software is applicable only to the “native” window of the Universal Station<sup>X</sup>

#### Product Description

The Alarm Point Schematic Initiation Package allows the user to display a schematic (on a different Universal Station) by selecting an associated point from the Alarm Summary display. This package can monitor up to 8,000 point per area. Each point can have one associated schematic display. To utilize this function, the operator can (from any of the TDC 3000<sup>X</sup> Alarm Displays) select a point (that is being monitored by the Alarm Point Schematic Initiation Package) and press the SCHEM key. The associated schematic display for this point appears on a pre-defined Universal Station. The pre-defined Universal Stations are set-up on a LCN console basis. Each console can have up to three different Universal Stations defined for displaying schematics. The Alarm Point Schematic Initiation Package software can also be configured so that the associated schematic can be displayed on the local Universal Station.

#### Software Environment

Releases of the Alarm Point Schematic Initiation Package software are available for use on the TDC 3000<sup>X</sup> systems using LCN release 401 and later. The approximate memory required for utilization of the package software is as follows:

The Alarm Point Schematic Initiation Package software runs on a Universal Station Node (US) on the TDC 3000<sup>X</sup> requiring one (1) additional megabyte of memory. This software runs with both the Operator and Universal Personalities. A minimum of four (4) megabytes of memory is required to run the Operator Personality with this software and a minimum of five (5) megabytes of memory is required to run the Universal Personality with this software.

The Alarm Point Schematic Initiation Package requires the following amounts of memory:

- 96,016 words of memory for 8,000 points.
- 13,796 words of memory for each of the external load module files.

## Required Hardware

For use of the Alarm Point Schematic Initiation Package software, the following hardware is required on the target TDC 3000<sup>x</sup> system:

- Universal Station or Universal Station<sup>x</sup> (US or U<sup>x</sup>S) with floppy disk drives or disk cartridge drives
- History Module (HM)

## Summary

The Alarm Point Schematic Initiation Package can assure consistency of operations during upset conditions, by always taking the operator to the correct associated display, when a point in alarm is selected from any of the three standard TDC 3000<sup>x</sup> alarm displays (Alarm Summary Display, Unit Alarm Display, Alarm Annunciator Display).

## Repeatable Special Notes

RSN-02

### Alarm / Message Window

#### Introduction

The Alarm/Message Window Package is an optional software package available for the Universal Station and the Universal Station<sup>x</sup> (US & U<sup>x</sup>S) in the **Honeywell TDC 3000<sup>x</sup>** system. This is a general purpose application which can be used to enhance the management of alarms for any process controlled by TDC 3000<sup>x</sup>.

**Note:** When used on the Universal Station<sup>x</sup>, this software is applicable only to the “native” window of the Universal Station<sup>x</sup>

#### Product Description

The Alarm/Message Window Package provides the user of the TDC 3000<sup>x</sup> Picture Editor the ability to build custom displays that can perform several expanded functions. This product allows critical alarm and message information to be presented to the operator on the most frequently used graphic displays.

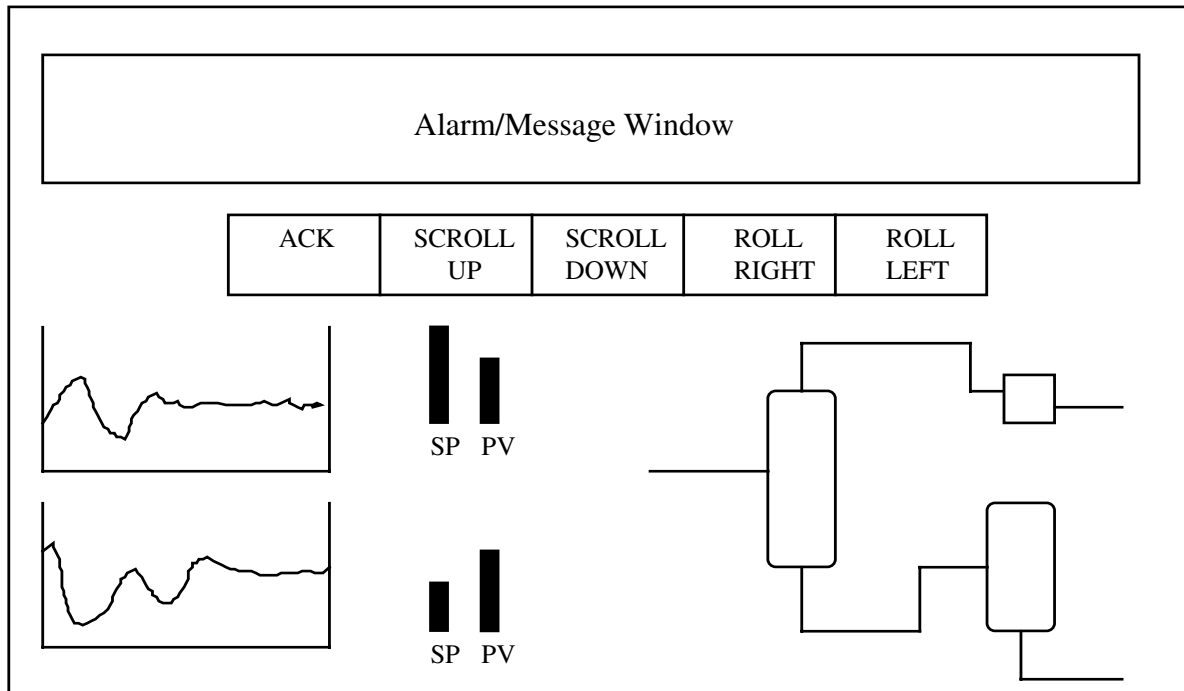
The Alarm Window and Message Window are designed to *allow system alarms and messages to be displayed within a custom graphic*. The windows provide an operator interface to these functions without having to leave the control graphic to look at alarms and messages as it is currently done with the standard alarm and message displays. Window sizing can be from one line to full-screen. Figure 1 shows an example of how the alarm and message window may be used in a custom graphic.

A set of new actors provides an interface to the alarm and message window, via targets, that are similar to the functions of current buttons used for these functions, such as acknowledge, page up, page down, etc.. The operator keyboard buttons **cannot** be used to manipulate the Alarm Window or the Message Window. The actors must be used for these functions.

In addition to the above functions, a filter is provided for better alarm and message management by the operator. The filter allows alarms and messages to be displayed according to a specific requested type that is of interest to the operator at that time. The filter types are Annunciator Group, Entity, PRIMMOD, Area, and Unit.

The Alarm Window and Message Window will display alarms or messages in chronological order according to alarm or message type.

The Alarm Window and Message Window are added to custom graphics through the Picture Editor in a manner much like other common phantoms such as RING and CIRCLE.



**Figure 1**

## Software Environment

Releases of the Alarm/Message Window Package software are available for use on the TDC 3000<sup>x</sup> systems using LCN release 401 and later. The approximate memory required for utilization of the Alarm/Message Window Package is as follows:

28,000 decimal words of memory for each of the personality types.

## Required Hardware

For use of the Alarm/Message Window Package software, the following hardware is required on the target TDC 3000<sup>x</sup> system:

- Universal Station or Universal Station<sup>x</sup> (US or U<sup>x</sup>S) with floppy disk drives or disk cartridge drives
- History Module (HM)

## Summary

The Alarm/Message Window Package can significantly improve the efficiency of operations by making critical alarm and message information available while custom displays are on the Universal Station screen.



## Repeatable Special Notes

RSN-03

### XY Plot

#### Introduction

The XY Plot is an optional software package which runs on the Universal Station and Universal Station<sup>x</sup> (US & U<sup>x</sup>S) of the **Honeywell TDC 3000<sup>x</sup>** system. This software option is included with many Honeywell supplied application packages and is used across all process industries.

**Note:** When used on the Universal Station<sup>x</sup>, this software is applicable only to the “native” window of the Universal Station<sup>x</sup>

#### Product Description

The XY Plot provides the user of the TDC 3000<sup>x</sup> Picture Editor the ability to build custom displays that contain single or multiple dynamic (and / or static) plots. These plots are generated utilizing data contained in Application Module (AM) and / or Computer Gateway (CG) resident *custom data segment* arrays.

Usually the data is placed in these *custom data segment* arrays by Control Language (CL) blocks running on Custom Points. Generally, user designed and implemented CL blocks collect the data (from various LCN nodes). The CL blocks then preprocess the data before storing the data into *custom data segment* arrays (for use by the XY Plot software package).

With the XY Plot software package, the user can build displays that:

- Plot an array of Y data against its array position.
- Plot an *averaged* array of Y data against its averaged array element position.
- Plot an array of Y data against an array of X data.
- Plot a single value of Y against a single value of X.
- Plot Bar Traces of Y array data.
- Plot Bar Traces of *averaged* Y array data.
- Display X and Y arrays in reverse order.
- Begin the drawing of a trace one place to the right of the Y axis.

The plots that the user includes in a display have the following characteristics:

- Maximum of 20 Plots per display.
- Maximum of 4 Traces per Plot (XY Plot or Bars).
- Array sizes may be up to 1000 elements.
- Bar Traces may be up to 640 bars.
- High/Low limit line may be displayed in the Y axis for one of the 4 traces of a plot, or all traces.
- Origin line may be displayed in the Y axis for one of the 4 traces of a plot, or all traces.
- High/Low limit line may be displayed in the X axis for one of the 4 traces of a plot or all traces.
- Origin line may be displayed in the X axis for one of the 4 traces of a plot or all traces.
- An XY axis line may optionally be displayed.
- A Plot is re drawn on the screen update cycle, or may be controlled by the user application.

The user configures dynamic or static values that define the following information for each trace:

- The starting and ending array element to be plotted.
- Display formats of:
  - Line.
  - Line with a Symbol at each XY coordinate.
  - Symbol at each XY coordinate.
  - Dots at each XY coordinate.
  - Solid Bars.
  - Hollow Bars.
  - Stair Step Bars.
  - Behavior Control Bars (always solid bars).
- Normal and alarm behavior.
- High/Low range values for the X and Y axis.
- High/Low limit values for the X and Y axis.
- Origin values for the X and Y axis.

The display size of the plot may be scaled at build time using standard Picture Editor scaling functions.

The type of XY plot to be displayed is determined by the data type defined for Y Source and X Source.

| If Y Source is: | and X Source is: | Then plot type =                      |
|-----------------|------------------|---------------------------------------|
| An array        | An array         | An array of Y vs. an array of X       |
| An array        | A single value   | An array of Y vs. Its' array position |
| A single value  | A single value   | Single vector XY plot.                |
| A single value  | An array         | Not valid and will not plot           |

Bar Trace plots utilize one of the following combinations of Y Source and X source data:

| Y Source: | X Source:      |  |
|-----------|----------------|--|
| An array  | An array       | (for use with Behavior Control Bars)                       |
| An array  | A single value | (for use with all other bars except Behavior Control Bars) |

## Software Environment

Releases of the XY Plot software package are available for use on TDC 3000<sup>x</sup> systems using LCN release 301.1.8 and later. The approximate memory required for utilization of the XY Plot software is as follows:

|        |               |   |                        |
|--------|---------------|---|------------------------|
| 25,000 | decimal words | - | OP XY Plot module      |
| 12,000 | decimal words | - | OP XY Plot heap memory |
| 3,000  | decimal words | - | OP BASE module         |
|        |               |   |                        |
| 3,000  | decimal words | - | EP XY Plot module      |
| 1,000  | decimal words | - | EP XY Plot heap memory |
| 6,000  | decimal words | - | EP BASE module         |
|        |               |   |                        |
| 27,000 | decimal words | - | UP XY Plot module      |
| 13,000 | decimal words | - | UP XY Plot heap memory |
| 8,000  | decimal words | - | UP BASE module         |

OP = Operator Personality

EP = Engineer Personality

UP = Universal Personality

The above allocations for heap memory will vary, depending on the number and complexity of the plots that the user builds into a display. The above allocations for heap memory are estimates based on user built displays with “average” plot configurations.

## Required Hardware

For practical use of the XY Plot software package, the following hardware is required on the target TDC 3000<sup>x</sup> system:

- Universal Station or Universal Station<sup>x</sup> (US or U<sup>x</sup>S) with floppy disk drives or disk cartridge drives
- History Module (HM)
- Application Module (AM)
- Computer Gateway (CG) (this type of node is optional)

## Summary

The XY Plot option extends the TDC 3000<sup>x</sup> system’s custom display capabilities by allowing the user to build custom displays, that present large volumes of data to the operator in a manner that is meaningful and understandable. This option is an enhancement to the TDC 3000<sup>x</sup> system’s custom display capabilities that complements the standard TDC 3000<sup>x</sup> trend displays.



## Repeatable Special Notes

RSN-04

### Key Card Access System

#### Introduction

The Key Card Access System is a modern replacement for the standard hardware key switch on Universal Stations of the TDC 3000<sup>x</sup> system. Users requiring strict system access control, will find the Key Card Access System an effective solution. The Key Card Access System controls and records system access for up to ten (10) Universal Stations in each logical console group.

#### Product Description

The Key Card Access System is composed of software and hardware (including an insertion type magnetic stripe card reader and fifty (50) user cards) to be used in place of or in conjunction with the standard hardware key switch.

The Key Card Access System provides:

- Additional System Security
- Expanded Access Control
- Documentation of Access Level Change Activity
- Flexibility in Configuration
- Card Compatibility With Honeywell Delta 1000 Card Access Control System

#### Additional System Security

In contrast to the standard key switch, with the Key Card Access System both a magnetic striped card and a unique password are required to change the access level of a Universal Station. The passwords are assigned by and can be changed by the system administrator. The Key Card Access System operates in parallel with the standard hardware key switch. One master key can be kept as a backup. If necessary, this key can be used to override the access level set by the Key Card Access System.

System access level changes are recorded in the Status Notification journal, which can be accessed through the Event History Retrieval function of the Universal Station.

At least one (1) Universal Station on the LCN **must** have a (permanently or temporarily installed) hardware key switch. This key switch is needed in order to install the Key Card Access System software.

### Expanded Access Control

The Key Card Access System grants the same three access levels as the standard key switch:

- Operator
- Supervisor
- Engineer

Additionally the Key Card Access System optionally utilizes the *View Only* level (which allows no changes to the system). Thus, the Key Card Access System can optionally provide true **four (4) level access control**.

When the user changes the access level using the Key Card Access System, the access level is set to the users preassigned level, on one or more Universal Stations (depending on the configuration and the user Universal Station selections). When the access level is restored, the Universal Station(s) which has / have been changed will return to the configured minimum access level (Operator or View Only).

The Key Card Access System allows the access level of any Universal Station (of a logical console group) to be changed by only one user at a time. Access level setting conflicts between users at different Universal Stations (of a logical console group) are automatically detected and prevented.

### Flexibility in Configuration

The Key Card Access System (hardware and software) can be configured to set the same access level on one (1) Universal Station or any combination of user selected Universal Stations within a logical console group (with a maximum of ten (10) Universal Stations per logical console group).

Or, the Key Card Access System (hardware and software) can be configured to set the access level only on the Universal Station with the card reader. In this configuration each Universal Station must have its own card reader.

The Key Card Access System can be installed on any combination of the various Universal Station types available. These Universal Station types include the following:

- Universal Station with Standard (“Classic”) or Ergonomic (“Z”) style furniture
- Universal Station<sup>x</sup> with Standard (“Classic”) or Ergonomic (“Z”) style furniture
- Universal Work Station with desk top video display and keyboards
- Universal Station as supplied with the Micro TDC 3000<sup>x</sup>

**Note:** The installation of the Key Card Access System hardware on a Universal Station<sup>x</sup> may require special hardware (depending on the vintage of the Universal Station<sup>x</sup>). Sale of the Key Card Access System on a Universal Station<sup>x</sup> is a “refer to factory” item, that may entail an additional charge.

**Note:** In this document, the term **Universal Station** is used to denote any of the various “Universal Station types” listed above.

**Warning:** When the Key Card Access System is installed on a **Universal Station<sup>x</sup>**, the access level is controlled by the Key Card Access System for user interaction with the **LCN displays only**.

The Key Card Access System can be configured for use by from one (1) to seventy five (75) users per system. Each user has a encoded magnetic striped card and a unique password (of one (1) to twelve (12) alpha numeric characters). Each user has a preassigned access level. For documentation purposes, the users

name can be from one (1) to fourteen (14) characters in length (including blank characters). The Key Card Access System is configured with this information by the system administrator.

### Documentation of Access Level Change Activity

Each time the access level of a Universal Station is changed or restored (using the Key Card Access System) the event is recorded in the Status Notification journal, which can be reviewed through the Event History Retrieval display.

The record of each change access level and restore access level event includes:

- Time and Date
- Node Number of Universal Station
- Access Level Change Status or Access Level Restore Status
- Universal Station Number
- Console Number of Universal Station
- User Name
- Access Level Requested (preassigned user access level)
- Access Level Actually Set

### Card Compatibility With Honeywell Delta 1000 Card Access Control System

Since the magnetic striped card used by the Key Card Access System utilizes *track one (1) (track I)*, and the magnetic striped card used by the Honeywell Delta 1000 Card Access Control System utilizes *track two (2) (track II)*, two (2) separate readable tracks can exist on the same card. Both tracks can be encoded on the same magnetic stripe. Thus, with the Key Card Access System card number encoded on *track one (1) (track I)* and the Delta 1000 Card Access Control System data encoded on *track two (2) (track II)*, the same card can be used to control access to a **building**, to a **control room** and to a **TDC 3000<sup>x</sup> system**.

The Delta 1000 Card Access Control System utilizes a different encoding specification, than that used by the Key Card Access System, so *track two (2) (track II)* of each card must be encoded with a Delta 1000 Card Access Control System compatible card encoder.

**Note:** The Honeywell Delta 1000 Card Access Control System is **not** a part of the Key Card Access System. It is a part of the building security system supplied by Honeywell Home and Building Control division.

### Software Environment

Releases of the Key Card Access System software are available for use on TDC 3000<sup>x</sup> systems using LCN Software Release 400 and later. The target Universal Station(s) must have sufficient memory dedicated to the use of the Key Card Access System. Each personality (Operator, Universal) requires different amounts of dedicated memory. The approximate memory required for utilization of the Key Card Access System software is as follows:

- Engineer Personality (Key Card Access System is not supported on Engineer Personality)
- Operator Personality 23K bytes (approximately)
- Universal Personality 34K bytes (approximately)



## Required Hardware

The Key Card Access System requires each of the following hardware items for operation:

- Insertion Type Magnetic Stripe Card Reader (38002018-100)
- Key Card Access Cable (38002017-003)
- Key Card Access Proc I/F (38002016-100)
- KJMP Assy. (51401594-100) (provided for all, but required only for some installations)
- RS 232 Jumper Cable (51304694-100) (provided for all, but required only for some installations)
- Mounting Hardware (varies by Universal Station type)
- Magnetic Striped Card (38002018-200) (one uniquely encoded card for each user)
- Universal Station (any of the following types, with floppy disk or cartridge disk drives):
  - ⇒ Universal Station with Standard (“Classic”) or Ergonomic (“Z”) style furniture
  - ⇒ Universal Station<sup>x</sup> with Standard (“Classic”) or Ergonomic (“Z”) style furniture
  - ⇒ Universal Work Station with desk top video display and keyboards
  - ⇒ Universal Station as supplied with the Micro TDC 3000<sup>x</sup>

**Note:** The installation of the Key Card Access System hardware on a Universal Station<sup>x</sup> may require special hardware (depending on the vintage of the Universal Station<sup>x</sup>). Sale of the Key Card Access System on a Universal Station<sup>x</sup> is a “refer to factory” item, that may entail an additional charge.

- History Module (required only for recording the Real Time Journal Entries and loading the Universal Stations)
- Magnetic Stripe Card Encoder (38002020-100) 120 volt (option available at additional cost)
- Magnetic Stripe Card Encoder (38002020-200) 220 volt (option available at additional cost)

The Card Reader is connected directly to the Universal Station through an existing RS 232 port with the hardware items listed above, no further hardware is required. The design of Key Card Access System makes it independent of any other devices on the Local Control Network.

At least one (1) Universal Station on each logical console group (to be controlled by the Key Card Access System) **must** have a card reader attached. It is **recommended** that at least two (2) Universal Stations on each logical console group have an attached card reader. The exact number of Universal Stations (with attached card readers) that is needed on a logical console group, depends on the way in which the user(s) make(s) use of the logical console group.

At least one (1) Universal Station on the LCN **must** have a (permanently or temporarily installed) hardware key switch. This key switch is needed in order to install the Key Card Access System software.

**Note:** The (High, Nominal, Low) switch on the Universal Station chassis power supply must be in the **Nominal** or **High** position, in order to provide the proper voltage to the card reader.

**Note:** The purchase of a compatible Magnetic Stripe Card Encoder for each plant site is highly recommended. Having an encoder at the plant site will facilitate the replacement of lost or damaged cards.

## Magnetic Striped Card Requirements

Magnetic Striped Cards utilized by the Key Card Access System must conform to the following specifications:

|                           |  |
|---------------------------|--|
| Encoding Type and Density | F/F2; 75 BPI                                 |
| Track and Magnetic Specs  | ANSI X4.16 / ISO 3554                        |
| Permissible Jitter        | + or - 30%                                   |
| Card Thickness            | 0.021 to 0.035 in (0.533 - 0.889 mm)         |
| Card Width                | 2.125 + or - 0.002 in (53.97 + or - 0.06 mm) |
| Card Length               | Nominal 3.375 in (85.72 mm)                  |
| Encoding Energy Level     | High Energy or Low Energy                    |
| Data Type                 | American Banking Association data BCD Format |

Cards used by the Key Card Access System must have the card number encoded on ***track one (1) (track I)*** of the magnetic strip.

Both high energy and low energy cards can be used in the card reader supplied as a part of the Key Card Access System.

With the Key Card Access System, Honeywell IAC supplies high energy cards with two (2) **magnetic stripes** on each card. Honeywell IAC encodes each card with a three (3) digit card number on ***track one (1) (track I)*** of each of the magnetic stripes. This allows a valid read of the card number, when either end of the card is inserted in the card reader.

## Summary

The Key Card Access System offers an alternative to the standard TDC 3000<sup>x</sup> keylock access/security mechanism. This system can provide improved security as well as more levels of access than is available with the standard hardware keylock. The Key Card Access System automatically documents access level changes. Also, the magnetic striped card used by the Key Card Access System can be compatible with Honeywell Home and Building Control division Delta 1000 Card Access Control System.

## Repeatable Special Notes

RSN-05

### AM File Print Set

#### Introduction

The AM File Print Set is a software package which runs on the Application Module (AM) of the **Honeywell TDC 3000<sup>x</sup>** system.

The AM File Print Set provides the user a method of printing History Module (HM) resident ASCII files, by making print requests in Control Language (CL) program blocks.

#### Product Description

A group of related subprograms which can be called from CL Blocks in the AM is packaged together as a SET.

The AM Print File Set of CL Runtime Extension Routines contains background subroutines which can invoke the printing of selected HM resident ASCII files on a selected matrix printer, optionally check for print completion (or error) and optionally cancel outstanding print requests. The CL callable subprograms interface with an asynchronously running task which processes file print requests and makes the file and printer access requests to the TDC 3000<sup>x</sup> system. A "stack" large enough to hold twenty (20) requests and / or errors is used to interface the CL callable subprograms and the print task. The request "stack" is not a true stack because the requests will not necessarily be processed in any particular order, because one (1) File Print Task and one (1) request "stack" is used to process requests from numerous CL Blocks, to various Matrix Printers.

The HM ASCII files are printed, one printer line output per file record. File record characters are not deleted or modified before being printed. Form feed characters are included in the printed output as directed by the calling CL Block (through the use of the appropriate parameters).

The AM File Print Set (AMPRNT) provides the following subroutine requests:

|                          |  |
|--------------------------|--|
| AMPRNT\$Print_HM_File    | - Print File (long request form)         |
| AMPRNT\$Print_File       | - Print File (short request form)        |
| AMPRNT\$Completion_Check | - Completion Check (of previous request) |
| AMPRNT\$Cancel_Print     | - Cancel (of previous request)           |

The CL callable subprogram AMPRNT\$Print\_HM\_File lodges a print request for the Print File Task. This subprogram has a number of user selectable options to control the requested print. The user selected options are as follows:

- Delete file when printing is completed.
- Check request for completion by a following Completion Check.
- Printer node number.
- Backup printer node number.
- Restart printing of file on printer failover to backup printer.
- Print a form feed before printing file.
- Print a form feed after printing file.
- Print file with automatic page control.
- Page length (number of lines to print on page).
- Starting file record number.
- Ending file record number.
- Starting record character number.
- Ending record character number.

The CL callable subprogram AMPRNT\$Print\_File lodges a print request for the Print File Task. This subprogram has a lesser number of user selectable options to control the requested print. The user selected options are as follows:

- Delete file when printing is completed.
- Check request for completion by a following Completion Check.
- Printer node number.

The CL callable subprogram AMPRNT\$Completion\_Check checks a previously lodged print request for completion or error.

The CL callable subprogram AMPRNT\$Cancel\_Print cancels a previously lodged print request, if the request has not already been printed.

## Software Environment

Releases of the AM File Print Set software package are available for use on TDC 3000<sup>x</sup> systems using LCN release 320 and later. The approximate memory required for utilization of the AM File Print Set software package is as follows:

- 19,000 decimal words - AM File Print Set load module

## Required Hardware

For use of the AM File Print Set software package, the following hardware is required on the target TDC 3000<sup>x</sup> system:

- Universal Station or Universal Station<sup>x</sup> (US or U<sup>x</sup>S) with floppy disk driver or disk cartridge drives
- History Module (HM)
- Application Module (AM)
- Matrix Printer
- 

## Summary

The AM File Print Set enhances the flexibility of the TDC 3000<sup>x</sup> system and can be employed by many different user applications, that have the need to print data located in History Module resident ASCII text files.



## Repeatable Special Notes

RSN-07

### Sequence Downline Load Package

#### Introduction

The Sequence Downline Load Package is a software package which runs on the Application Module (AM) of the **Honeywell TDC 3000<sup>x</sup>** system.

The Sequence Downline Load Package consists of two independent Sequence Downline Loading Sets which contain Background Subroutines that are identical in functionality with the exception of the methods of passing sequence point names as arguments.

Each of the Sequence Downline Loading Sets provides a method by which the downline loading of a sequence program to a “process box” may be automated through a set of Control Language (CL) subroutine calls in an Application Module (AM) program. The types of “process boxes” to which a sequence program can be downline loaded include the Multifunction Controller (MC), the Process Manager (PM) and the Advanced Process Manager (APM).

#### Product Description

A group of related subprograms which can be called from CL Blocks in the Application Module (AM) is packaged together as a SET. The Sequence Download Set of CL Runtime Extension Routines contains Background which will invoke downline loading of control sequence programs to a process box. Two Sequence Download Sets are provided, using two different methods of passing sequence point names as arguments. One Set, SDLL\_S, accepts a sequence point name as a string, and the CL Runtime Extension Routines will convert the string to internal entity id form. The second set, SDLL\_E, accepts the sequence point name in internal entity id form in a Custom Data Segment (CDS) parameter. There are four subroutine calls provided in each Set:

Set SDLL\_S (Point names in string format):

- SDLL\_S\$Get\_Seq\_Obj\_File - Get Sequence Object File
- SDLL\_S\$Build\_RM\_Path - Build Removable Media Path
- SDLL\_S\$Create\_Obj\_File - Create Object File
- SDLL\_S\$Download\_Sequence - Download Sequence

Set SDLL\_E (Point names in internal entity form):

- SDLL\_E\$Get\_Seq\_Obj\_File - Get Sequence Object File
- SDLL\_E\$Build\_RM\_Path - Build Removable Media Path
- SDLL\_E\$Create\_Obj\_File - Create Object File
- SDLL\_E\$Download\_Sequence - Download Sequence

### Get Sequence Object File

The subroutine "Get Sequence Object File" will accept a sequence point name and a sequence program name and will return the object file name for that point and sequence.

### Build Removable Media Path

The subroutine "Build Removable Media Path" will accept an object file name specifying "NET", a physical node number of where the removable media resides, the media type (floppy disk or disk cartridge), and the drive number. It will return the object file name for the removable media input parameters. This routine provides the user with the ability to define removable media path names to downline load sequences from removable media.

### Create Object File

The subroutine "Create Object File" will copy a given sequence object file to a file with a new name, and if the file is a Process Manager (PM) or an Advanced Process Manager (APM) object file, update information contained in the header record to match the new location data. This routine provides the user with the ability to downline load a sequence program to a different Process Module point than the sequence program was compiled against.

### Download Sequence

The subroutine "Download Sequence" will accept a sequence point name and an object file name and perform the downline load. It gives the user the option to stop the sequence program state before the downline load and/or start the sequence program after a successful downline load. It also provides the user with the ability to delete the object file after a successful downline load.

### Two Sequence Downline Load Set Versions

The Sequence Downline Load Package consists of two independent Sets which contain Background Subroutines that are identical in functionality with the exception of the methods of passing sequence point names as arguments. The Sequence Downline Load Set which will accept sequence point names as string arguments (SDLL\_S), requires the use of the Conversion Set, "CONV", to perform Data Access calls to convert the sequence point ids from external to internal format. The Conversion Set is currently distributed with the AM personality, but is quite large, therefore the user may prefer to use the Downline Load Set which does not require the additional Conversion Set. The AM that is loaded with the Downline Loading Set using string argument passing must be configured to contain both Sets CONV and SDLL\_S. The Sequence Downline Load Set which will accept sequence point names as internal entity ids (SDLL\_E), does not require any additional Sets, but only accepts a sequence point name in a CDS parameter which is of internal entity id type.

NOTE: Only **one** Sequence Downline Load set may be configured on an AM at a time. i.e. SDLL\_S and SDLL\_E may not be loaded together on an AM.



## Software Environment

Releases of the Sequence Downline Load Package software are available for use on the TDC 3000<sup>x</sup> systems using LCN release 320 and later. The approximate memory required for utilization of the Sequence Downline Load Package software is as follows:

- 7,000 decimal words - Sequence Downline Load Set module (entity version)
- 7,000 decimal words - Sequence Downline Load Set module (string version)

## Required Hardware

For use of the Sequence Downline Load Package software, the following hardware is required on the target TDC 3000<sup>x</sup> system:

- Universal Station (US) with floppy disk drives or disk cartridge drives
- Application Module (AM)
- Multifunction Controller (MC) or Process Manager (PM) or Advanced Process Manager (APM)
- History Module (HM)

## Summary

The Sequence Downline Load Package is a useful tool for control system implementers/engineers to enable automatic loading and start-up of sequence programs in MCs or PMs or APMs. This software package can be used to simplify the system start-up process for operations personnel.



## Repeatable Special Notes

RSN-08

### Large Character Phantom

#### Introduction

The Large Character Phantom is a software package which runs on the Universal Station or Universal Station<sup>x</sup> (US or U<sup>x</sup>S) of the **Honeywell TDC 3000<sup>x</sup>** system.

The Large Character Phantom provides the user of the TDC 3000<sup>x</sup> Picture Editor the ability to build custom graphic displays, that can contain large size real numbers. Commonly used variant subpictures for display of *large size real values* are difficult to manage and take up excessive amounts of both schematic space and on line processing time. By using the Large Character Phantom, a user may very simply define a field, format, and condition for display of the required parameter of the type real. This is not only faster than common variant subpicture schemes, but also takes up much less room in the schematic. The Large Character Phantom is added to custom schematics through the Picture Editor in a manner much like similar phantoms such as RING and CIRCLE.

**Note:** When used on the Universal Station<sup>x</sup>, this software is applicable only to the “native” window of the Universal Station<sup>x</sup>

#### Product Description

A phantom is a prebuilt subpicture. Instead of being a subpicture that is *user built*, a phantom is handled by the LCN Universal Station software. The Large Character Phantom is designed to portray real numbers in a user specified format on the screen in a large, solids based form. The Large Character Phantom is SCALEABLE and can INHERIT BEHAVIOR.

## Software Environment

Releases of the Large Character Phantom software package are available for use on the TDC 3000<sup>x</sup> systems using LCN release 400 and later. The approximate memory required for utilization of the Large Character Phantom software package is as follows:

|        |               |                                     |
|--------|---------------|-------------------------------------|
| 12,000 | decimal words | - OP Large Character Phantom module |
| 3,000  | decimal words | - OP BASE module                    |
| 2,000  | decimal words | - EP Large Character Phantom module |
| 6,000  | decimal words | - EP BASE module                    |
| 13,000 | decimal words | - UP Large Character Phantom module |
| 8,000  | decimal words | - UP BASE module                    |

OP = Operator Personality

EP = Engineer Personality

UP = Universal Personality

## Required Hardware

For use of the Large Character Phantom software package, the following hardware is required on the target TDC 3000<sup>x</sup> system:

- Universal Station or Universal Station<sup>x</sup> (US or U<sup>x</sup>S) with floppy disk drives or disk cartridge drives
- History Module (HM)

## Summary

The Large Character Phantom can greatly enhance the readability of custom graphics by allowing the display of values for a few key parameters in larger than normal size characters.

## Repeatable Special Notes

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