GFK-1475

New In Stock!
GE Fanuc Manuals

http://www.pdfsupply.com/automation/ge-fanuc-manuals/operator-interface/GFK-1475

operator-interface
1-919-535-3180

WinCfg Software

www.pdfsupply.com

Email: sales@pdfsupply.com

Datapanel

Operator Interface Products

WinCfg Software

User's Guide

GFK-1475D May 1999

Warnings, Cautions, and Notes as Used in this Publication

Warning

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

Caution

Caution notices are used where equipment might be damaged if care is not taken.

Note

Notes merely call attention to information that is especially significant to understanding and operating the equipment.

This document is based on information available at the time of its publication. While efforts have been made to be accurate, the information contained herein does not purport to cover all details or variations in hardware or software, nor to provide for every possible contingency in connection with installation, operation, or maintenance. Features may be described herein which are not present in all hardware and software systems. GE Fanuc Automation assumes no obligation of notice to holders of this document with respect to changes subsequently made.

GE Fanuc Automation makes no representation or warranty, expressed, implied, or statutory with respect to, and assumes no responsibility for the accuracy, completeness, sufficiency, or usefulness of the information contained herein. No warranties of merchantability or fitness for purpose shall apply.

©Copyright 1997—1999 GE Fanuc Automation North America, Inc.
All Rights Reserved.

Preface

Content of This Manual/Revisions to this Manual

This manual describes installation and operation of WinCfg software release 3.3.1, which includes the following new features:

- The ability to do "Save As" has been added to for model J+ and model K databases.
- Quote characters (") will be stripped from Remote Address fields during the import from file operation. This helps circumvent a problem caused by certain spreadsheets that arbitrarily surround the data in certain cells with quote (") characters.
- An option has been added to analog tag scaling for the case where protocol 9 or 141 is being used and the tag datatype is "SIGNED WORD". This option permits you to cause the External Limits field to be treated as an Unsigned value, even though the tag datatype signed.
- In the Digital Tag dialog, the "Frequency" choice is disabled when the selected remote addresses reference internal bits. Internal bits are always executed at the greatest frequency.

The following features were introduced in release 3.3.0:

- Ability to open a .DTB file as well as a new or existing database file.
- Recipe system provides a means of defining blocks of data addresses in a target device and blocks of data values to be sent to that device. You can configure analog and digital recipe tags and use them to build a Recipe Group.
- File Transfer Utility allows you to upload the contents of a Datapanel into the current database.
- Import command processes a tab delimited file and uses the data to creates analog tags, digital tags, communications blocks, and overview groups in the current database.
- New geometric objects are available in the Graphic page configuration: Rectangle, Circle, and Frame. The Lines tool now includes a Shape feature which can be used to create irregular shapes.
- Dynamic properties, which allow graphic objects to modify their appearance in response to the value of a tag, can be configured for graphic objects. Dynamic properties consist of: conditional blink, color, position, rotation, and fill. The properties available for configuration depend on object type. Dynamic color and position can be configured for an object group.
- The Macro operation can now be configured for Pushbutton objects. WinCfg can now handle 35 button styles (previous limit was 20).
- WinCfg now supports use of the Genius PCIM card with Protocol 91.
- A new Communications Protocol dialog box supports the Multicomms feature of Model H, 150, 160, 240E, 320T and 1000 Series Datapanels. Two PLCs can be connected to the Datapanel and a different protocol can be specified for each communications port.

Related Publications

GFK-1571	*Datapanel 200 and 300 Range Operator's Manual*
GFK-1528	*Datapanel 100 Range Operator's Manual*
GFK-1513	*Datapanel 1000 Range Operator's Manual*
GFK-1476	*Datapanel Models H, J+ and K Operator's Manual*

Contents

Chapter 1 Quick Start 1-1

Installing WinCfg Software 1-1
Starting WinCfg 1-1
Using Online Documentation 1-1
Using WinCfg to Configure a Datapanel 1-2

Chapter 2 Introduction 2-1

Overview of Datapanels 2-1
Overview of WinCfg Software 2-1
Data Flow Between the Controller and the Datapanel 2-2
Analog and Discrete Data 2-3
Scaling of Raw Data 2-3
Configuration Procedure 2-4

Chapter 3 Getting Started 3-1

Installing WinCfg Software 3-1
WinCfg File Structure 3-2
Starting WinCfg Software 3-3
  WinCfg Software Main Window 3-3
  Main Window Menu Bar 3-4
    File 3-4
    Edit 3-4
    Configure 3-6
    Setup Comm Ports 3-7
    Window 3-7
    Help 3-7

Chapter 4 Setting up the Datapanel Database 4-1

Creating a Database 4-1
  Open Database Dialog Box 4-3
    New Database 4-3
    Existing Database 4-3
  Open DTB File Dialog Box 4-4
Transferring a Database from the Datapanel 4-5
Importing a Database 4-6
Setting Database Preferences 4-8
  Preferences Dialog Box 4-8
Configuring the Database Parameters 4-9
  Protocol Type 4-9
    Advanced Settings for Genius Protocol 4-11
    PCIM Configuration Advanced Choices Dialog Box 4-11
    Advanced Settings for SNP/SNPX Protocol 4-12
    Protocol 68 Advanced Choices Dialog Box 4-12
    Advanced Settings for Modicon Host Slave 4-14
    Advanced HostComms Configuration Dialog Box 4-14

    Configuring Passwords 4-14
        System Passwords Dialog Box 4-14
    Configuring System Settings 4-15
        System Settings Dialog Box 4-15
Operator Customization 4-17
    🔍 More Information 4-18

Chapter 5 **Configuring Tags, Groups, and Message Tables 5-1**

Remote Address Wizard 5-2
Configuring Analog Tags 5-2
Configuring Digital Tags 5-7
Configuring Overview Groups 5-8
Configuring Recipe Groups 5-9
    Configure Recipe Groups Dialog Box 5-9
Configuring Message Tables 5-10
    Creating a New Message Table 5-10
    Creating a New Message 5-11
    Editing or Deleting a Message Table 5-11
    Editing or Deleting a Message 5-12

Chapter 6 **Initial Page Design 6-1**

Graphics Page Design Window 6-2
Using the Right Mouse Button Menu 6-4
Operations Common to all Objects on the Page 6-5
    Selecting Objects 6-5
    Sizing Objects 6-5
    Moving Objects 6-5
    Cut/Copy/Paste 6-5
    Editing Existing Objects 6-5
Common Dialog Boxes 6-6
    Graphic Browser 6-6
    Tags 6-7
        Tag Browser Dialog Box 6-7
    Font Selection 6-8
        Font Dialog Box 6-8
Static Attributes of Graphic Objects 6-9
    Height, Width, Justification, and Direction 6-9
    Width and Offset 6-9
    Color 6-9
        Color Choice Dialog Box 6-10
Fields of a Tag 6-11
Dynamic Display 6-11

Configuring Dynamic Color 6-13
Considerations for Dynamic Color 6-13
Configure Properties Dialog Box 6-14
Configuring Dynamic Blink 6-15
Configuring Dynamic Position 6-15
Configuring Dynamic Rotation 6-16
Configuring Dynamic Fill 6-16
Dynamic Display Examples 6-17
Object Color Controlled by Object Tag 6-17
Object Color Controlled by Tag Other than Object Tag 6-17
Cutting, Copying, and Pasting Graphic Pages 6-18
General Information Regarding Cut/Copy/Paste 6-18
Cutting a Page 6-18
Copying a Page 6-19
Pasting a Page 6-19

Chapter 7 Displaying Information on the Page 7-1

Text Objects 7-1
Formatted Text Display 7-1
Message Tables 7-2
Message Display Dialog Box 7-2
Message Table Browser 7-3
Edit Message Table 7-4
Adding an Analog Tag to the Page 7-5
Analog Tag Display Dialog Box 7-5
Adding a Digital Tag to the Page 7-6
Digital Tag Display Dialog Box 7-6
Adding a Bitmap to the Page 7-7
Adding a Trend Record to the Page 7-8
Configure a Trend Record Dialog Box 7-8
Adding a Trend Display to the Page 7-11
Trend Display Dialog Box 7-11
Adding Lines and Shapes to the Page 7-12
Lines or Shape Display Dialog Box 7-12
Editing Lines on the Page 7-13
Adding a Meter to the Page 7-14
Configure a Meter Dialog Box 7-14
Adding Geometric Objects to the Page 7-15
Configure a Frame Dialog Box 7-15
Configure a Circle or Rectangle Dialog Boxes 7-15
Grouping Graphics 7-16
Using Templates 7-16

Graphics Grid 7-17
  Set Graphics Grid Dialog Box 7-17

Chapter 8 Configuring Operator Input 8-1

Output Operations 8-2
Configuring Embedded Function Keys 8-2
Adding a Touch Region to the Page 8-3
  Touch Region Operation Dialog Box 8-4
Adding a Push Button to the Page 8-4
  Button Operation Dialog Box 8-5
Configuring Drive Out (Operator Write) 8-6
Configuring Output Operations 8-7
  Macro 8-7
  Creating a Macro 8-8
  Macro Examples 8-9
  Configuring the Ramp Function 8-11
  Configuring the Toggle Function 8-12
  Configuring the Jog Function 8-12
  Configuring Direct Write 8-13
  Configuring Recipe Load/Transfer 8-14
    Configure Recipe Operations Dialog Box 8-14

Chapter 9 Configuring Datapanel Communications 9-1

Overview 9-1
  Multicomms 9-1
  Multidrop 9-2
Port Settings 9-2
  Datapanel Com 1 Port Dialog Box 9-2
  Datapanel COM 2 Port Dialog Box 9-3
Clock Communications 9-4
Configuring Clock Communications 9-5
  Clock Communications Dialog Box 9-5
Communications Blocks 9-6
  Communications Blocks Structure 9-6
  Configuring a Communications Block 9-8
  Communications Block Dialog Box 9-8
  Executing Comms Blocks on Demand 9-11
  Communication Block Browser Dialog Box 9-12
Configuring Datapanels for Host/Slave Communications 9-13
  Datapanel 160, 240E, H v2, 320T, and Series 1000 9-13
  Datapanel J+ and 240T 9-13
PLC-Invoked Datapanel Page Change Operation 9-13

Chapter 10 Loading Your Datapanel....................10-1
Hardware Setup 10-1
Datapanel Transfer Utility.................... 10-2
Downloading a Database to the Datapanel.................... 10-3
Uploading a Database from a Datapanel.................... 10-4
Erasing Datapanel Flash Memory 10-4
Port Settings 10-5

Chapter 11 Advanced Configuration....................11-1
Function Keys 11-1
    To Configure a Key 11-1
Bitmaps 11-3
    Creating Bitmaps.................... 11-3
    Overlaying Bitmaps.................... 11-4
    Sizing Bitmaps 11-4
    Initiating Bitmap Placement: Bitmap Type Selection 11-4
    Bitmap Selection 11-4
        Static Bitmap 11-5
        Discrete Bitmap 11-6
        Limit Bitmap 11-7
        List Bitmap.................... 11-8
        Managing Bitmaps.................... 11-9

Chapter 12 Troubleshooting and Common Setup Problems 12-1
Frequently Asked Questions 12-1
    How do I get started?.................... 12-1
    Now that I’ve created my database, how do I transfer it to the Datapanel?.................... 12-1
    What is the difference between the two rows of function keys on the function key Macro Keypad?.................... 12-1
Common Problems 12-2
    Why won’t my database transfer to the Datapanel? 12-2
    Why won’t the configuration of my Datapanel toggle a bit in my PLC on and off? I’ve checked everything and it looks correct, but still it is not working properly. 12-2
    Why won’t my Read Data and Display Text Page comms block work?.................... 12-2
Checklist for Download Failure 12-2

Chapter 13 Technical Data....................13-1
System Tables 13-1
Registers and Bits.................... 13-3
    Datapanel Register Table.................... 13-3
    Datapanel Bit Table.................... 13-4
Error Codes 13-5
    Communications Error Codes 13-5

System Error Codes 13-5
Controller Errors 13-5
Host Comms for J+ and 240T Datapanels 13-6
Host Comms Protocol 13-6
Configuration Information 13-6
Communication Parameters 13-7

Chapter 1

Quick Start

This chapter is provided as a reference and a simplified introduction and operation guide for WinCfg software. See subsequent chapters in this manual or the online help provided with WinCfg for more detailed information and explanation.

Installing WinCfg Software

Insert WinCfg Disk 1 in the floppy drive. Click FILE (Win 95 START), RUN. Type floppy drive letter + :SETUP. Press ↵. Follow the instructions on the screen. Change the disks when prompted. (For more detailed information, refer to Chapter 3, “Getting Started.”)

Starting WinCfg

If an icon was created , double-click the icon. If no icon was installed: Click FILE, RUN (Windows 95: START, RUN); type “c:\wincfg\wincfg”, press ↵. (For more detailed information, refer to Chapter 3, “Getting Started.”)

Using Online Documentation

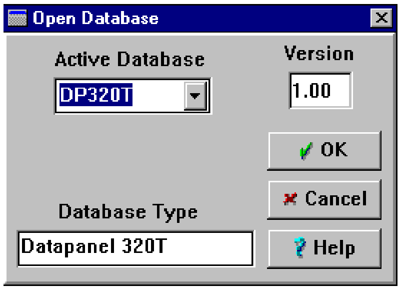
WinCfg software includes detailed Help topics that are loaded onto the hard disk of your computer during the software installation procedure and are readily accessible. To see the Help contents or search for a topic using the index, go to the Help menu. To see a topic specific to the active window or dialog box, click the Help button or icon provided on the window or dialog box.

Using WinCfg to Configure a Datapanel

The configuration of a Datapanel involves four main steps:

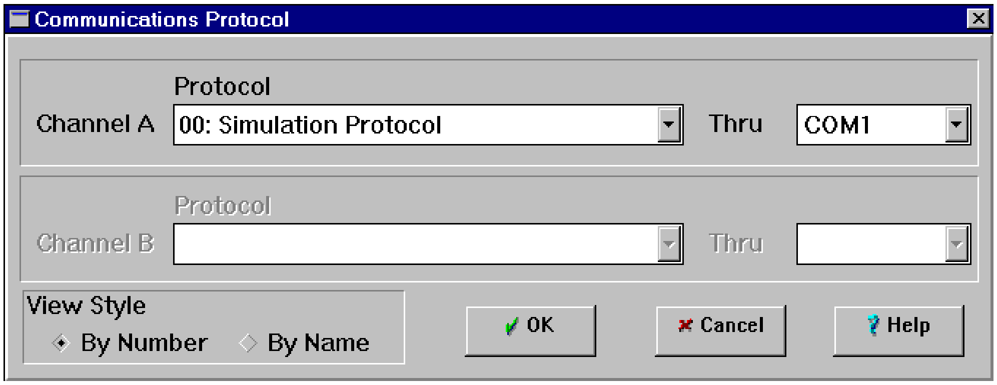
1. **Creating a database and configuring its parameters.**

To create a new database, go to the File menu, select Open, and then Open Database. The Open Database dialog box will appear. Type the name of the database you want to create in the Active Database field and click OK. An Application Message dialog box will appear verifying that you want to create a new database. Click OK. The Select Database Type dialog box will appear. Select the Datapanel model for which you are creating the database and click OK. The name of the new database will appear in the Name field of the status bar at the bottom of the WinCfg window. For other ways of creating a database, refer to Chapter 4, “Setting up the Datapanel Database.”



Active Database: DP320T
Version: 1.00
Database Type: Datapanel 320T

You must configure at least one channel for database-controller communications. (You can specify up to two protocols through two different communications ports.) To configure channels, select Protocol Type from the Configure menu. The Communications Protocol dialog box will appear.



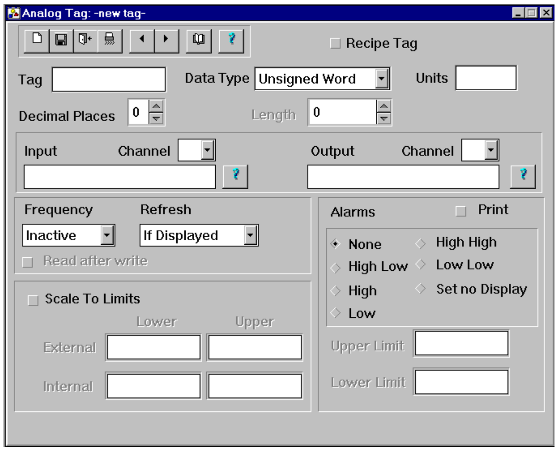
Channel A — Protocol: 00: Simulation Protocol — Thru: COM1
View Style: ◆ By Number ◇ By Name

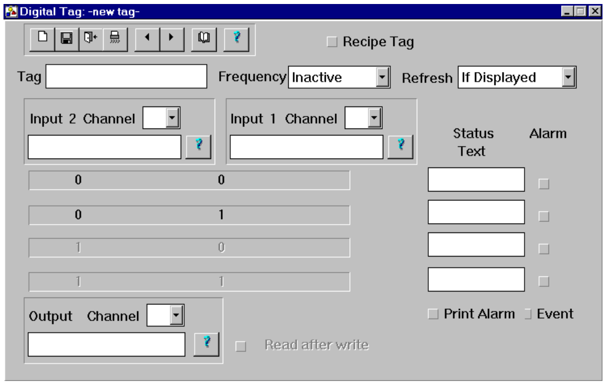
Other database parameters consist of Preferences (from the File menu), and Passwords and System Settings (on the Configure menu). You can also perform these actions by clicking the appropriate button on the WinCfg main toolbar. Details for configuring channels and protocols are provided in Chapter 4, “Setting up the Datapanel Database.” Advanced information about Datapanel communications is provided in Chapter 9, “Configuring Datapanel Communications.”

Note: To delete a database, use Windows Explorer to delete the folder from the WinCfg DBASE folder. (You cannot delete a database that is currrently open in WinCfg, and you must exit WinCfg before deleting the folder.)

2. **Defining the analog and digital tags indicating the points to be monitored or controlled.**

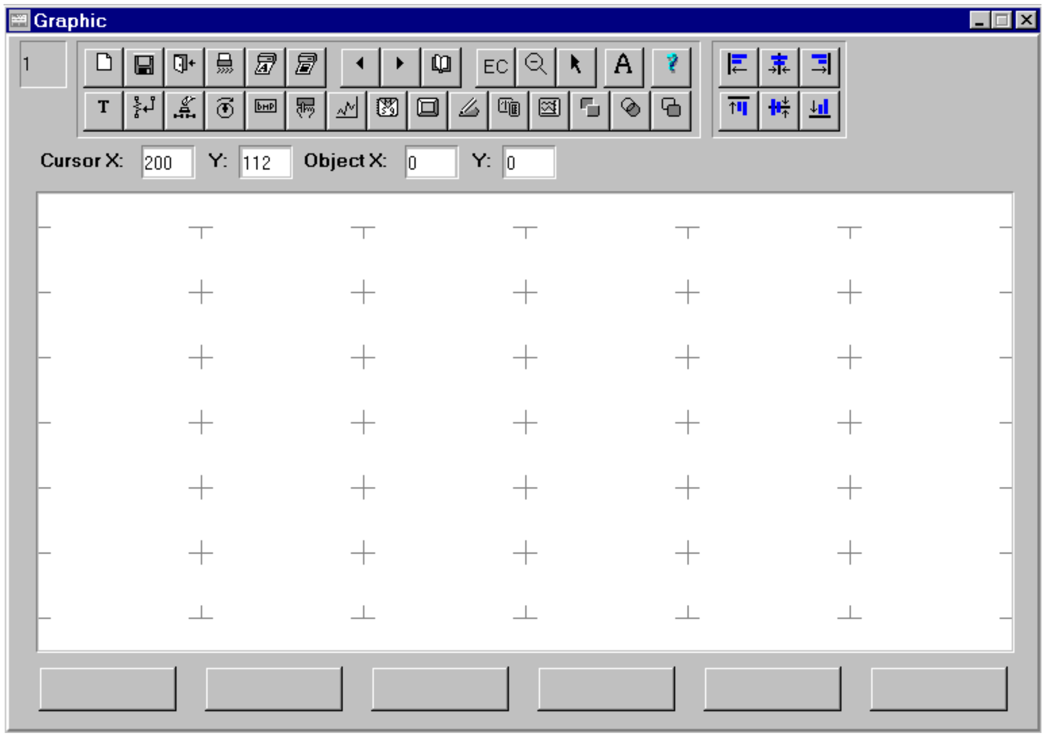
   To configure tags, select Analog Tag or Digital Tag from the Configure menu, or click the appropriate button on the main toolbar. (Analog and digital *recipe tags* are configured from the same dialog boxes as regular analog and digital tags.) Be sure to specify which channel your addresses are to be used on. This must coincide with the protocol and channel specified in step 1. For details about configuring tags, refer to Chapter 5, “Configuring Tags, Groups, and Message Tables.”


Data Type: Unsigned Word
Decimal Places: 0
Length: 0
Frequency: Inactive
Refresh: If Displayed
Alarms: ● None
Analog Tag: -new tag-
☐ Recipe Tag
Tag
Units
Input
Channel
Output
Channel
☐ Print
○ High Low
○ High
○ Low
○ High High
○ Low Low
○ Set no Display
☐ Read after write
☐ Scale To Limits
Lower
Upper
External
Internal
Upper Limit
Lower Limit


Frequency: Inactive
Refresh: If Displayed
Digital Tag: -new tag-
☐ Recipe Tag
Tag
Input 2 Channel
Input 1 Channel
Status Text
Alarm
0 0
0 1
1 0
1 1
☐ Print Alarm
☐ Event
Output Channel
☐ Read after write

3. **Configuring the graphic page displays.**

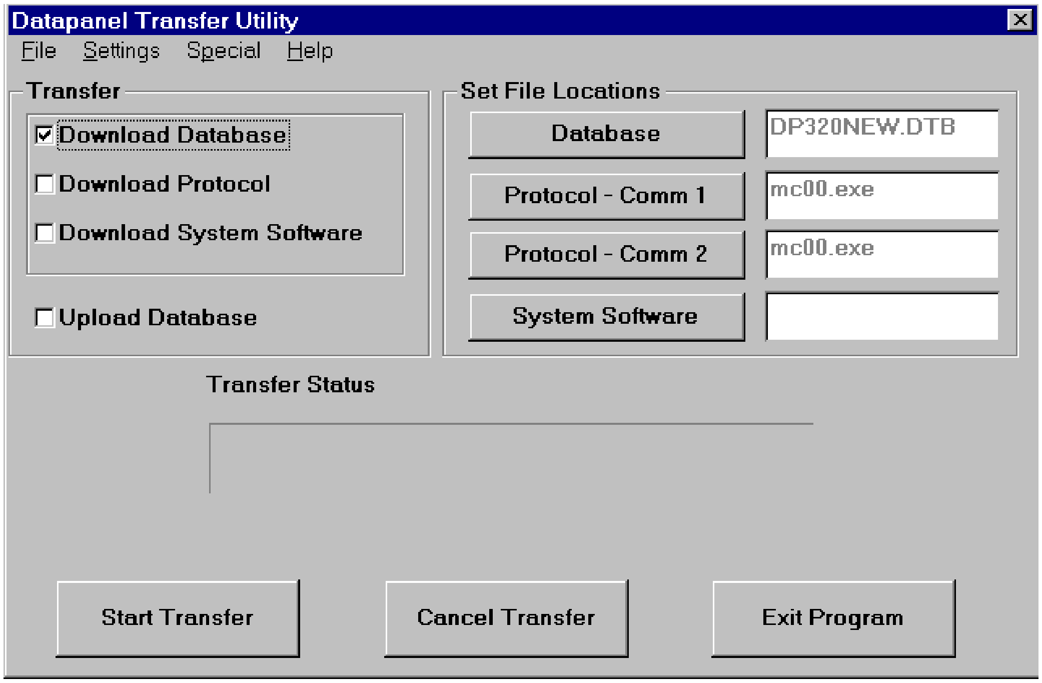
   To configure graphic pages, select Page from the Configure menu or click the Graphic Pages button on the Toolbar. The Graphic window will appear. (The features presented in this window depend on the database type.) For an overview, refer to Chapter 6, “Initial Page Design.” For details on creating graphic objects, refer to Chapter 7, “Displaying Information on the Page.” For details on configuring objects that allow operator input, refer to Chapter 8, “Configuring Operator Input.”



Cursor X: 200 Y: 112 Object X: 0 Y: 0

4. Transferring (downloading) the database to the Datapanel.

Use the supplied download cable to connect the WinCfg computer to the Datapanel and put the Datapanel in Host Transfer mode. From the WinCfg File menu, select Transfer or click the Transfer Utilities button on the main toolbar. For details, refer to Chapter 10, “Loading Your Datapanel.”



Transfer

☑ Download Database

☐ Download Protocol

☐ Download System Software

☐ Upload Database

Set File Locations

Database: DP320NEW.DTB

Protocol - Comm 1: mc00.exe

Protocol - Comm 2: mc00.exe

System Software:

Datapanel Transfer Utility
File
Settings
Special
Help
Transfer Status
Start Transfer
Cancel Transfer
Exit Program

Chapter 2

Introduction

This chapter provides an overview of the configuration procedure. The following topics are presented:

- Overview of Datapanels
- Overview of WinCfg Software
- Data Flow Between the Controller and the Datapanel
- Analog and Discrete Data
- Scaling of Raw Data
- Configuration Procedure

Overview of Datapanels

Datapanels provide a low-cost human-machine interface for transferring control data between the Datapanel and a programmable logic controller (PLC) or other intelligent control device. Datapanels are self-contained, solid state industrial display systems incorporating their own display screens and keypads. Each unit forms a comprehensive operator terminal. A wide range of communication capabilities is provided and an extensive list of controller protocols is supported. In order to utilize the capabilities of the Datapanel, the Datapanel must be configured for each specific application. The WinCfg software is used to perform this configuration.

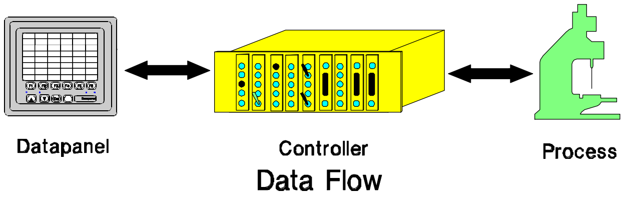
Overview of WinCfg Software

WinCfg software is a Windows-based program that provides a graphical user interface, drop-down menus, toolbar buttons, and other features to perform the configuration of Datapanels. WinCfg is sold separately and can be used to configure any Datapanel in the entire Datapanel Range or to configure multiple Datapanels of the same type. This guide assumes a working knowledge of the Windows environment. For more information about menus, toolbars, etc., consult your Windows documentation.

WinCfg requires a PC-compatible computer running Windows NT, Windows 95, or Windows 98. WinCfg must be installed on the PC before it can be used for Datapanel configuration.

Data Flow Between the Controller and the Datapanel

The Datapanel provides efficient communications with the controller to ensure prompt process response to operator input and rapid update of Datapanel displays. This ensures that the operator is always working with the most current information. The information on the protocol required by the controller must be loaded into the Datapanel from WinCfg. This is accomplished by choosing the appropriate controller from a list.


Datapanel
Controller
Process
Data Flow

Communication between the controller and the Datapanel is accomplished by configuring controller addresses into tags and transmitting them over a serial link. The Datapanel automatically generates the specific format or protocol required by the particular controller.

A diagram of the flow of data into and out of the Datapanel is shown in the following figure. Although understanding the data flow between the controller and the Datapanel is helpful to the configuration process, the WinCfg user interface provides a simple method of proper configuration. WinCfg will assist you in making the correct selections.

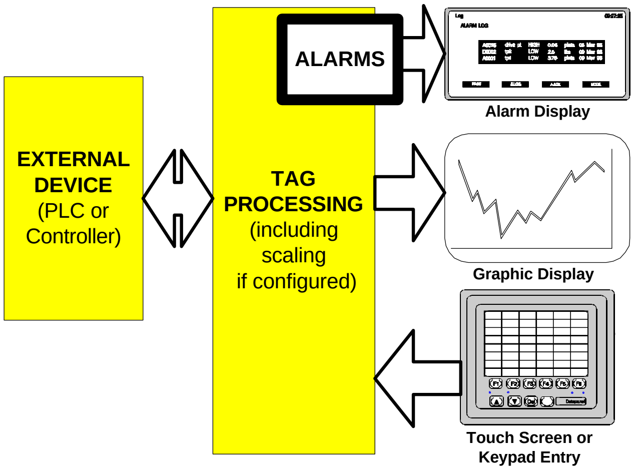

EXTERNAL DEVICE (PLC or Controller)
TAG PROCESSING (including scaling if configured)
ALARMS
Alarm Display
Graphic Display
Touch Screen or Keypad Entry

Figure 2-1. Simplified Data Flow Diagram

Analog and Discrete Data

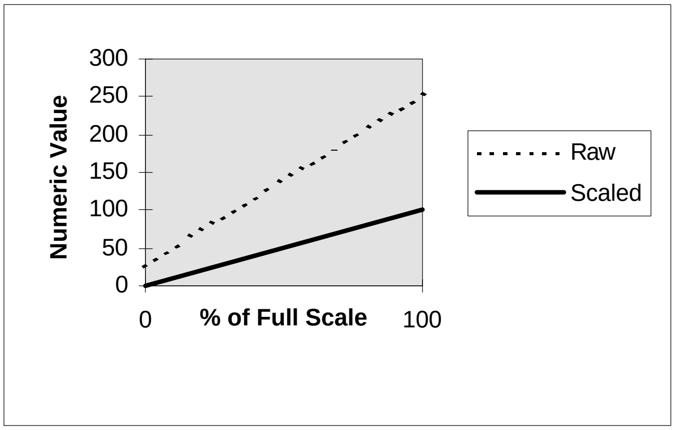
Continuously variable plant process data are considered *analog* variables. Such values may represent temperatures, pressures, timers, counters, etc. Within the controller and Datapanel, these variables are stored and processed as digital representations of the analog values.

Discrete variables can have a limited number of states, e.g., ON/OFF or OFF/LOW/MEDIUM/HIGH. Data from a discrete variable is stored in the form of one or more bit values (1 or 0) which represents the states of a variable.

The Datapanel has provisions for storage and manipulation of both types of variables. WinCfg provides an easy method of defining data storage without needing detailed knowledge about the internal structure of the Datapanel. Each analog or discrete variable is identified by an alphanumeric *tag*. This tag capability allows you to assign meaningful, easily remembered designations for the data. Limits can be associated with the tags to trigger alarms in the case of out-of-tolerance data values.

Scaling of Raw Data

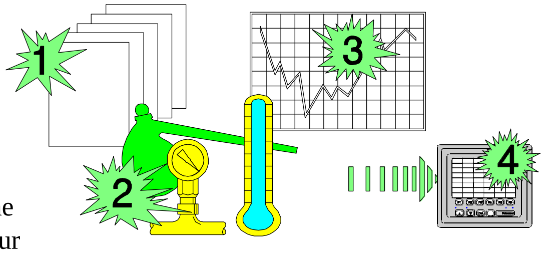
The raw data provided by the controller can be converted into engineering values according to the information supplied during configuration. For example, a process input in the controller might have a value between 25 and 255. The conversion information could be configured to scale the value to between 0 and 100 degrees Celsius.



Configuration Procedure

The configuration of a Datapanel involves four main steps:

1. Creation of a database
2. Definition of the tags indicating the points to be monitored or controlled
3. Configuration of the page displays
4. Transferring (downloading) the database to the Datapanel. Refer to Chapter 10, “Loading Your Datapanel” for details on hardware setup and using the Transfer utility.



The execution of these four steps is described in chapters 4 through 10, which describe a typical configuration operation. The examples given assume that you are either creating a new database or modifying an existing database.

Additional detailed information on some of the menus and choices is provided in Chapter 11, “Advanced Configuration.” Seldom-used WinCfg capabilities are also described in the detailed information. Operations relating to transferring or importing are described in Chapter 10, “Loading Your Datapanel

Watch for these two symbols to help guide you through the installation and operation:

💡 Shows tips on performing operations.

🔍 Indicates where to find detailed information.

Note

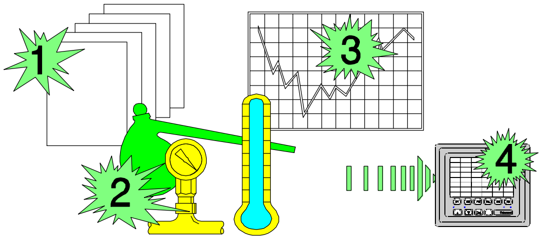
Password Protection helps keep your critical processes safe from unauthorized operation

Chapter 3

Getting Started

This chapter provides details on how to install and start WinCfg software. It also provides an overview of the menu selections, main window toolbar, and status bar.

Installing WinCfg Software



WinCfg follows the typical Windows installation procedure:

1. Apply power to the computer. (It is not necessary to have the Datapanel connected or to configure either the computer Comm port or the Datapanel Comm port.)
2. Start Windows NT, Windows 95, or Windows 98.
3. Insert WinCfg Disk 1 in the floppy drive.
4. Start WinCfg setup:
   - A. Click FILE (Win 95 START), RUN.
   - B. Type floppy drive letter + :SETUP, e.g., A:SETUP. Press ↵
   - C. Follow the instructions on the screen. Change the disks when prompted.

The installation program will create the following directory and file structure:

WinCfg File Structure

WINCFG (or the name chosen during installation)

BITMAPS (2-color bitmaps for use with monochrome displays)

BMPCOLOR (16-color bitmaps for use with color displays or 16-gray monochrome displays)

CMD (all files containing Datapanel command software)

The files are named as follows:

Wxxxyzzz.cmd or .exe

W is e – engineering version
A – OEM special version
V – English version
F – French version
G – German version

Xxx is the software version 330 matches WinCfg 3.3.0

Y is patch onto the main version

Zzz is the Datapanel type (DPK, DPJ – J plus, DPH – H version 2, 150, 160, 240, 24E – 240 expanded, 320, m00 – all series 1000 models.)

DBASE (all files related to the Datapanel databases)

DP240T (sample database for Model 240T using the simulation protocol — Protocol #00)
DP320T (sample database for Model 320T using the simulation protocol — Protocol #00)
DPK (sample database for Model K using the simulation protocol — Protocol #00)
DPJP (sample database for Model J+ using the simulation protocol — Protocol #00)
DPH (sample database for Model H using the simulation protocol — Protocol #00)
DP160 (sample database for Model 160 using the simulation protocol — Protocol #00)
DP240TGEF (sample database for Model 240T using SNP/SNPX protocol — Protocol #68)
DP320TGEF (sample database for Model 320T using SNP/SNPX protocol — Protocol #68)
DPKGEF (sample database for Model K using SNP/SNPX protocol — Protocol #68)
DPJPGEF (sample database for Model JP using SNP/SNPX protocol — Protocol #68)
DPHGEF (sample database for Model H using SNP/SNPX protocol — Protocol #68)
DP160GEF (sample database for Model 160 using SNP/SNPX protocol — Protocol #68)

Note

The first databases are for particular panels and use the simulation protocol (number 0) so that the features look like they have live data. All the databases that end in 'GEF' use SNP/SNPX protocol number 68. These show an example of how to talk to the series 90 PLC. They are NOT models KGEF, JPGEF, etc.

UserName-1 (location of database and name created by user)
|
|
UserName-n (location of database and name created by user)

.DB3 files (configuration files used by WinCfg for UserName-n)
.DTB files (database for UserName-n compiled from .DB3 files by Transfer Utility. Used by Datapanel only.)

HELP (WinCfg help files)

PROTOCOL (all protocols available at the time of release of this version of WinCfg)

STYLES (four black and white push button styles, ten color styles)

Starting WinCfg Software

If a WinCfg icon was created during the WinCfg installation process, double-click the icon. If no icon was installed:

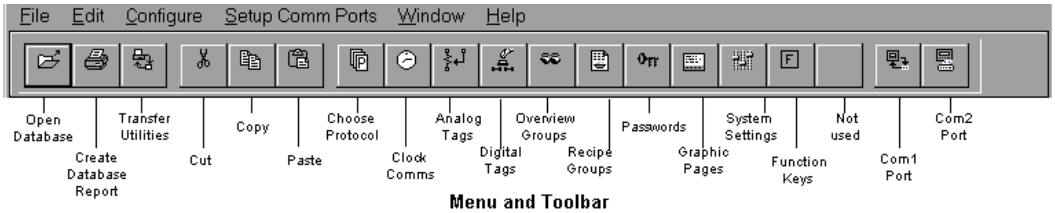
- Click FILE, RUN (Windows 95: START, RUN)
- Type “c:\wincfg\wincfg”, press ↵.
  (If WinCfg is installed in some directory other than wincfg, use that directory name.)

WinCfg Software Main Window

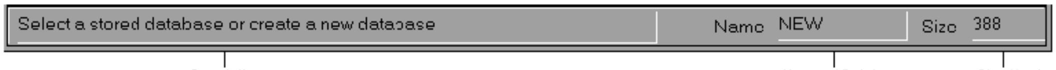
The main (opening) window of WinCfg contains a menu bar, a toolbar across the top, and a status bar along the bottom which provides information relating to the specific operation being performed.

The main window toolbar has a number of shortcut buttons available for selected tasks. The function designations of the buttons are shown in Figure 3-1 and correspond to the tool tip associated with the button. Additional tasks can be found on the WinCfg menus.

The main window status bar has four fields to provide helpful information as you work with WinCfg. The largest field displays a description of the item under the mouse pointer. The Name field displays the name of the database being configured. The Size field shows the used size of the current database, and the Free field shows the amount of memory available for the database.


File
Edit
Configure
Setup Comm Ports
Window
Help
Open Database
Create Database Report
Transfer Utilities
Cut
Copy
Paste
Choose Protocol
Clock Comms
Analog Tags
Digital Tags
Overview Groups
Recipe Groups
Passwords
Graphic Pages
System Settings
Function Keys
Not used
Com1 Port
Com2 Port

Menu and Toolbar



Select a stored database or create a new database
Name NEW
Size 388

Description
Name of Database
Size Used

Status Bar

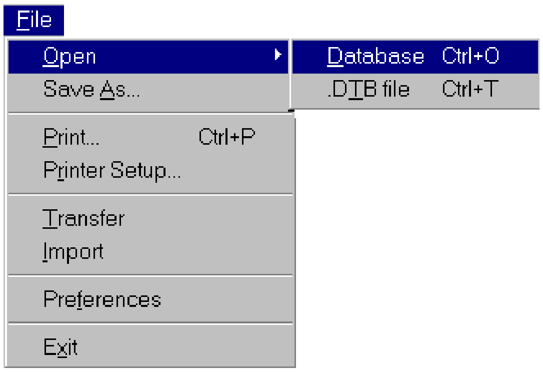
Figure 3-1. WinCfg Main Window

Main Window Menu Bar

The main window menu bar offers six selections:

File **Edit** **Configure** **Setup Comm Ports Selection** **Window** **Help**

File


File
Open
Database Ctrl+O
.DTB file Ctrl+T
Save As...
Print... Ctrl+P
Printer Setup...
Transfer
Import
Preferences
Exit

Choosing **File** from the menu bar accesses a drop-down menu with eight selections:

Open – allows you to open a Database or a .DTB file or create a new database.

Save As – allows you to save the current database into a new database of the same or different type

Print – allows you to configure the output of a database report. (In previous versions of WinCfg, this was the Export command.) To print from the Graphics page, use the Print Graphics and Print Text buttons on the Graphics page toolbar.

Printer Setup – standard Windows print utility. Allows you to select printer, layout, and printer options.

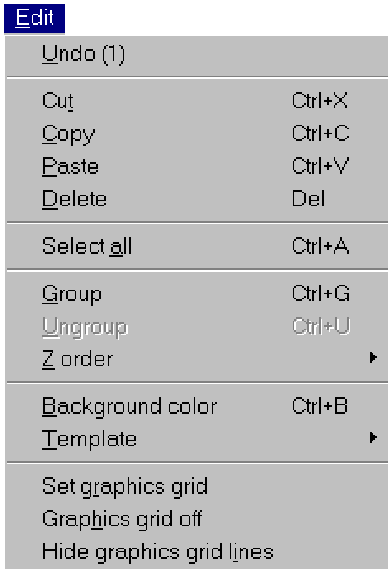
Transfer -- starts the Datapanel Transfer Utility, which implements the transfer of configuration information from WinCfg to the Datapanel.

Import -- implements the selection and importing of a database into WinCfg.

Preferences allows the selection of Automatic Save on Data Change and Remote Address Assistance for editing databases. Automatic Bit to Tag applies to converted databases.

Exit – Closes WinCfg. If you have edited the current database, WinCfg will prompt you to save your changes.

Edit


Edit
Undo (1)
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete Del
Select all Ctrl+A
Group Ctrl+G
Ungroup Ctrl+U
Z order
Background color Ctrl+B
Template
Set graphics grid
Graphics grid off
Hide graphics grid lines

The selections on the **Edit** menu allow to you perform operations on the graphic page. (Many of these selections are also available on the popup menu.) Some selections are active only when a graphic object or objects are selected.

Undo allows you to undo operations performed since the last save. Indicates the number of operations you have performed on the current graphics page.

Cut removes the selected object or objects and places the selection on the clipboard.

Copy copies the selected object or objects and places the selection on the clipboard.

Paste places WinCfg objects that have been cut or copied onto the graphic page. (If you paste onto the current page, the pasted object will appear on top of the original. If you paste onto a different page, the objects will appear at the same coordinates as the original.)

Delete removes the selected object or objects.

Select all selects all objects on the current page.

Group groups selected objects so that they can be handled as a single unit. To select multiple objects, click and drag to draw a box around them or hold down the shift key while clicking the objects you want to select.

Ungroup ungroups the selected group of objects.

Z order – provides the ability to rearrange the stacking order of graphics. When this item is selected, a drop-down list will appear with three selections:

> ***Send to back*** causes the selected graphic(s) to be moved behind all other graphics.
>
> ***Shuffle overlaid*** causes the stacking order of overlaid items to be changed by bringing the graphic on the bottom up to the top.
>
> ***Edit Z order*** allows you to arrange the stacking order without limitation. When this item is selected, the Overlaying Order dialog box will appear.

Background Color allows you to select the background color of the Datapanel display. Opens the Color Choice dialog box.

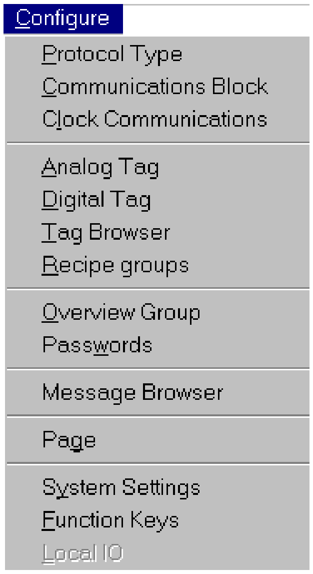
Set graphics grid configures the snap-to-grid feature of WinCfg. Opens the Set Graphics Grid dialog box.

Graphics Grid On/Off turns the WinCfg snap-to-grid feature on and off.

Hide/show graphics grid lines Available if Graphics Grid On was selected (so the item reads: Graphics Grid Off). Show Grid Lines in the Set Graphics Grid dialog box has a similar function. Turns the display of grid lines on and off.

Template allows you to add or delete a template on the page. Selecting Add opens the Graphic Browser dialog box.

Configure



The **Configure** menu bar has 14 selections. Each of these selections (except Communications Block and Message Browser) can also be accessed by clicking on a toolbar button as shown in Figure 3-1.

Protocol Type opens the Communications Protocol dialog box so you can select the protocols for Datapanel-to-controller communications.

Communications Block allows you to configure communications blocks for serial communication between the controller and the Datapanel.

Clock Communications allows you to synchronize Datapanel and controller clock settings.

Analog Tag allows you to configure a *tag* that specifies analog data to be processed and displayed by the Datapanel. The Analog Tag – new *tag* dialog box appears.

Digital Tag allows you to configure a *tag* that specifies digital data to be processed and displayed by the Datapanel. The Digital Tag – new *tag* dialog box appears.

Tag Browser opens the Tag Browser dialog box, which allows you to create, view, and edit analog and digital tags.

Recipe Groups allows you to select a group of recipes to be displayed together.

Overview Group allows you to select a group of up to 10 *tag*s to be displayed together. (A database can have up to 100 overview groups.) Opens the Overview Tag Type dialog box.

Passwords allows you to specify password protection for Off-line, Graphic Page Drive Out, and Overview Drive Out. (Monitor Drive Out is not used in this version of WinCfg.)

Message Browser allows you to configure a message table. Message display is controlled by an associated *tag*. Opens the Message Table Browser dialog box.

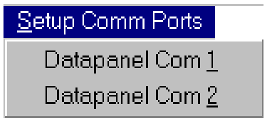
Page opens the Graphic window for designing graphic pages for display on the Datapanel.

System Settings allows you to configure the following Datapanel settings: Display, Status LED, System, and Arrow Keys (monochrome models only).

Function Keys allows you to configure operations for the Datapanel’s embedded function keys (or function keys on an external keyboard).

Local IO Not used for current Datapanel types.

Setup Comm Ports



Choosing **Setup Comm Ports** from the menu bar accesses a drop-down menu with two selections:

Datapanel Com 1

Datapanel Com 2

Each of these selections can also be accessed by clicking on a toolbar button. For details, see "Configuring Datapanel Communications."

These port settings apply to Datapanel-controller communication, not Datapanel-PC communication. The port settings configured by this selection in WinCfg are activated by the Datapanel when the Datapanel is connected to the controller.

Window

Selecting **Window** from the menu bar accesses a drop-down menu with four selections which operate in the usual Windows manner.

Help

Selecting **Help** from the menu bar accesses the built-in WinCfg help function. The help function operates in the usual Windows manner.

Chapter 4

Setting up the Datapanel Database

This chapter presents a typical procedure for creation of a Datapanel database. For each Datapanel model, WinCfg provides a sample database that can be used as an example. See “WinCfg File Structure” in Chapter 3.

Creating a Database

There are a number of possible sources of databases:

1. If no suitable database exists, you can *Open* a new one and configure it for the current application.
2. If a suitable database has already been created by WinCfg, you can *Open* it in WinCfg, modify it if necessary, and download it to the Datapanel. The database will exist as a complete set of .DB3 files or a .DTB file.
3. If you are modifying a database that already exists in the Datapanel, you can *Transfer* the database to WinCfg (upload it), modify it, and download it back to the Datapanel.
4. If a suitable database is available from another source, you can *Import* the database into WinCfg.

The database creation procedure is illustrated in Figure 4-1. The Open, Transfer, and Import commands are accessed from the File menu. Choosing one of these options will produce one of the dialog boxes shown below. There is also an icon for Transfer on the toolbar.

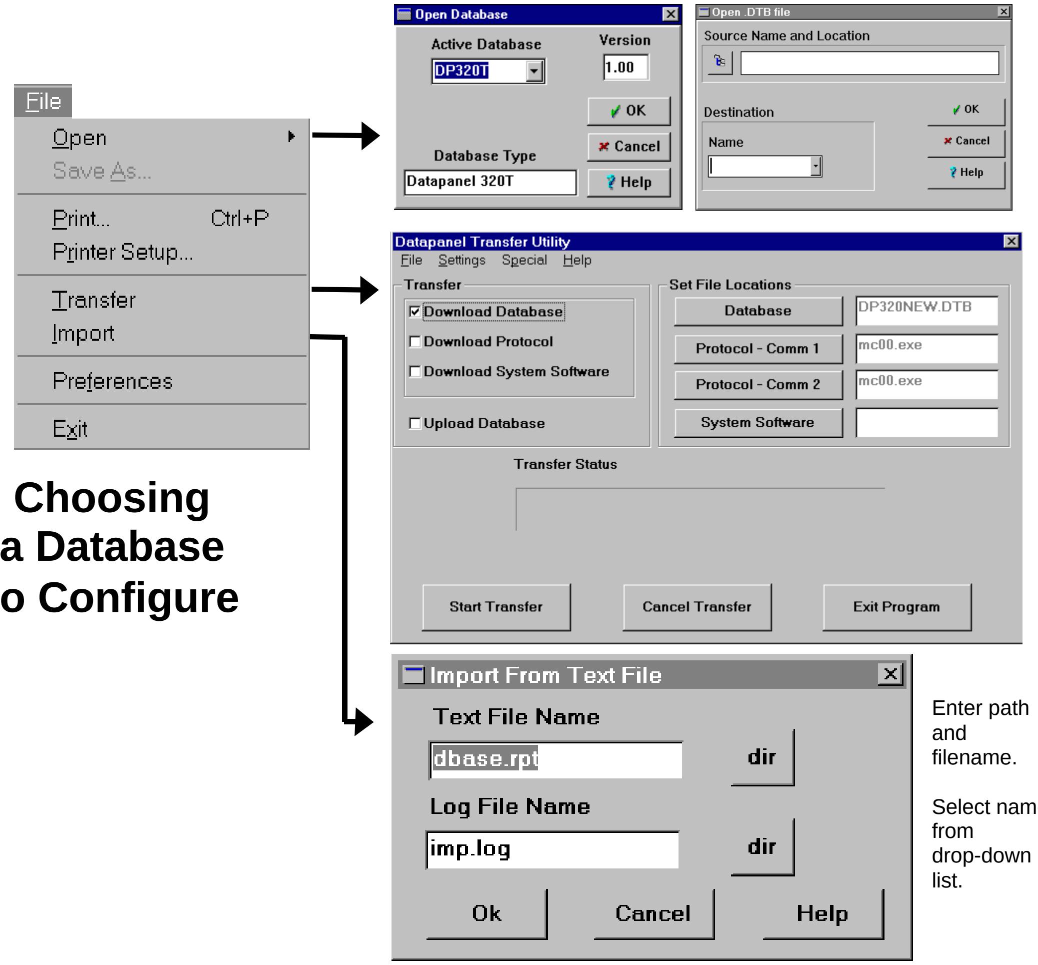
A database can be backed up outside of WinCfg using Windows tools.

Note: To completely delete a database, switch to another database in WinCfg, close WinCfg, and then use Windows Explorer to delete the desired folder from the WinCfg DBASE folder. (You cannot delete the current database shown in WinCfg.)

Open existing or create new database

Transfer the existing database from Datapanel

Import a database to change its type



File
Open
Save As...
Print... Ctrl+P
Printer Setup...
Transfer
Import
Preferences
Exit
Open Database
Active Database
Version
OK
Cancel
Help
Database Type
Open .DTB file
Source Name and Location
Destination
Name
OK
Cancel
Help
Datapanel Transfer Utility
File Settings Special Help
Transfer
Set File Locations
Database
Protocol - Comm 1
Protocol - Comm 2
System Software
Transfer Status
Start Transfer
Cancel Transfer
Exit Program
Import From Text File
dir
dir
Ok
Cancel
Help

Active Database: DP320T

Version: 1.00

Database Type: Datapanel 320T

☑ Download Database

☐ Download Protocol

☐ Download System Software

☐ Upload Database

Database: DP320NEW.DTB

Protocol - Comm 1: mc00.exe

Protocol - Comm 2: mc00.exe

Text File Name: dbase.rpt

Log File Name: imp.log

Choosing a Database to Configure

Enter path and filename.

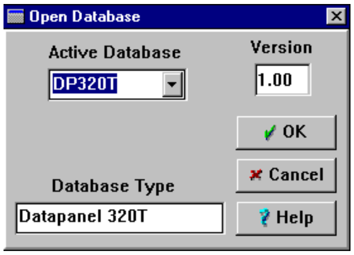
Select name from drop-down list.

Figure 4-1. Database Creation Procedure

Open Database Dialog Box

New Database

To open a new database, type the name of the database in the Active Database text box. Click OK. The program will prompt for confirmation that you want to create a new database. Click Yes. The Select Database Type dialog box will appear. Choose the appropriate Datapanel model. Click OK. (The Datapanel H Mark 2 is the default selection.)

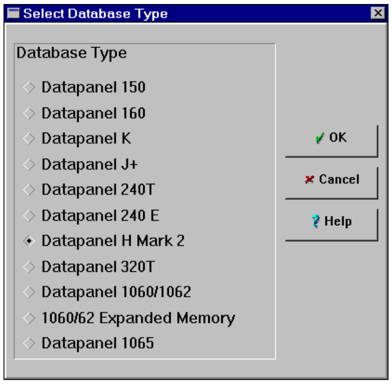


Open Database

Active Database: DP320T

Version: 1.00

Database Type: Datapanel 320T



Select Database Type

Database Type

- ○ Datapanel 150
- ○ Datapanel 160
- ○ Datapanel K
- ○ Datapanel J+
- ○ Datapanel 240T
- ○ Datapanel 240 E
- ● Datapanel H Mark 2
- ○ Datapanel 320T
- ○ Datapanel 1060/1062
- ○ 1060/62 Expanded Memory
- ○ Datapanel 1065

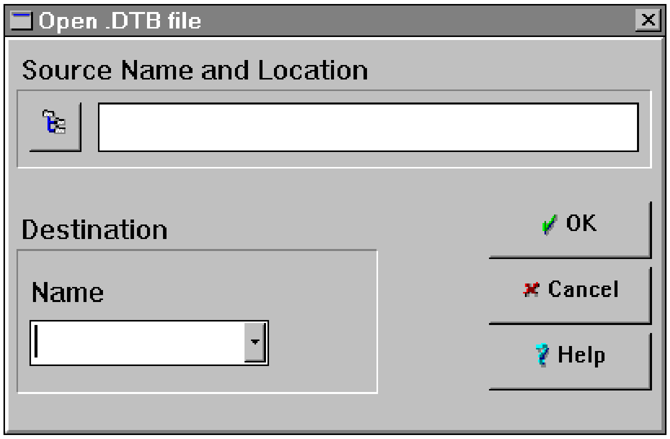
Database Names

Database names can be up to eight characters long. Alphanumeric characters (A—Z and 1—9), as well as the underscore (_) character are allowed. The database name must start with a character.

Existing Database

To open an existing database, click the arrow in the Active Database text box to access the drop-down list of available databases. The list will show those databases that are in the Dbase subdirectory of the directory containing WinCfg. Choose the desired database, click OK.

Open DTB File Dialog Box



Source Name and Location

To open a .DTB file, click the Browse button next to the Source Name and Location box. The Select Source Database browser window will open. Navigate to the folder containing the DTB file you want to open and click the file name.

Destination

In the Name box, you can either type the name of a new database to be created, or select an existing database from the dropdown list. If you type a new database name, the message “Database does not exist. Create?” will appear. To create the new database, click yes. If you select an existing database, WinCfg will replace it with the contents of the selected .DTB file.

If the source folder containing the .DTB file is the same as that specified for the destination, subsequent modifications to the database will overwrite the original .DTB file when you do a transfer to the Datapanel.

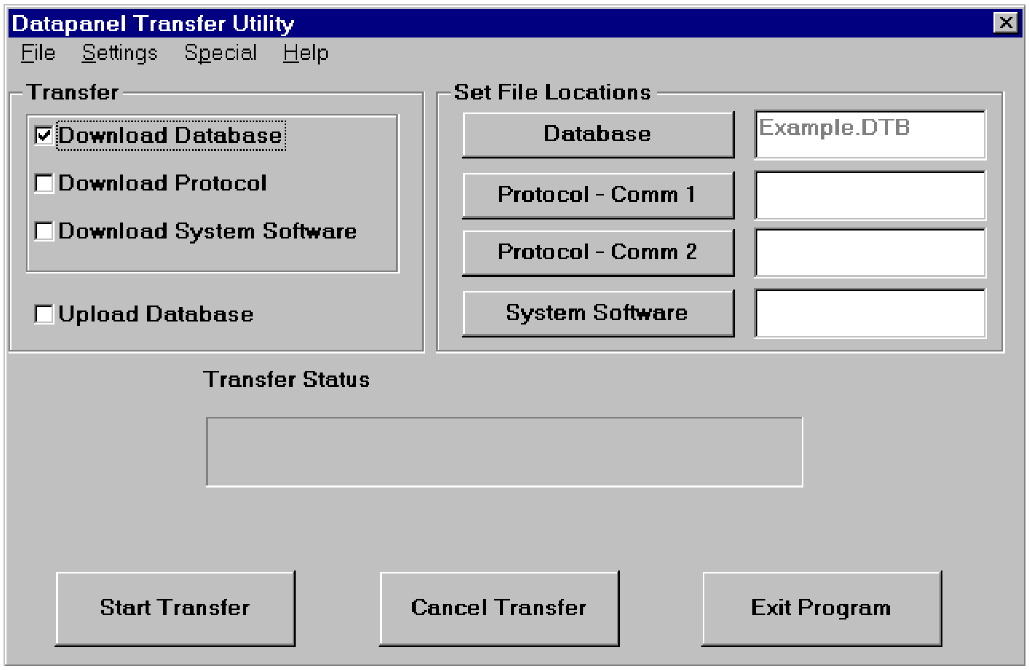
Transferring a Database from the Datapanel

Note

In order for transfers to occur, WinCfg must be connected to the Datapanel using the supplied cable, and the Datapanel must be in Host Transfer mode. Refer to the Datapanel manual for details on how to put the Datapanel in this mode.

To transfer (upload) a database from the Datapanel:

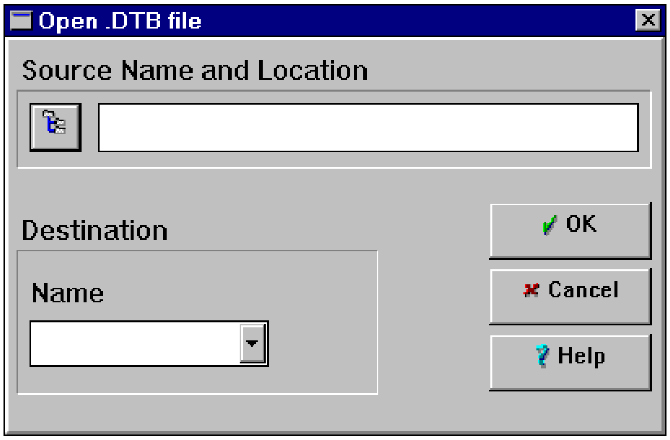
1. Click the Transfer Utilities button, or select Transfer from the File menu. The Datapanel Transfer Utility dialog box will appear.


Datapanel Transfer Utility
File
Settings
Special
Help
Transfer
Set File Locations
Database
Protocol - Comm 1
Protocol - Comm 2
System Software
Transfer Status
Start Transfer
Cancel Transfer
Exit Program

☑ Download Database
☐ Download Protocol
☐ Download System Software
☐ Upload Database

Database: Example.DTB

2. In the Datapanel Transfer Utilities dialog box, click the Upload Database box.
3. Click Database under “Set file locations”. This brings up the Select Database File dialog box. Navigate to where you want the .dtb file to be stored on your hard drive.
4. Click Start Transfer. This takes the image of the database in the Datapanel and saves it as the file you specified in the database box.
5. When the transfer is complete, click Exit Program.



6. To uncompress the .dtb file into the .db3 files that WinCfg uses, select Open, .DTB File from the File menu. The Open .DTB file dialog box will appear.
7. To locate the .DTB file that you just uploaded, click the browse button next to the Source Name and Location box. The Select Source Database browser will open. Select the new .DTB file and click OK to return to the Open .DTB file dialog box.
8. Enter a Destination Name for the database. (You can either overwrite an existing database or create a new one.) If you specify a new database name, WinCfg will create a new folder for it.
9. Click OK.

For more information about using the Transfer Utility, refer to Chapter 10.

Importing a Database

WinCfg provides the ability to import components of database configuration in a tab delimited form. For large applications you can use a spreadsheet to create the configuration, then generate a tab delimited file to be imported into WinCfg.

The tab-delimited files contain a specific text format that represents the configured components of the WinCfg database. Import supports the following database records. This is useful for large applications that might use a spreadsheet for configuration before generating a tab delimited file and importing it into WinCfg.

- Analog Tags
- Digital Tags
- Communications Blocks
- Overview Groups

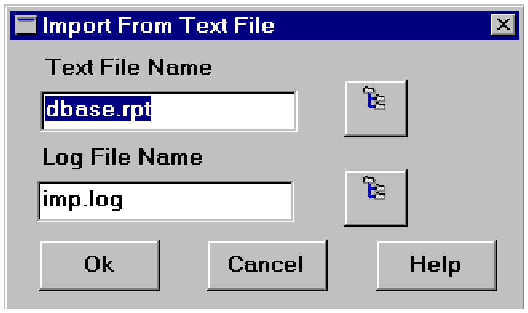
Each record type has its own tab delimited format. The formats match the output generated by the database report function provided by WinCfg. It is recommended that, before you begin construction of a new database from a spreadsheet, you first export (or print) a simple database from WinCfg and look at it in the spreadsheet software to get an understanding of how the information in the cells is formatted.

Note

File size of the database to be imported must be less than 500 lines or records. If the file is larger than the 500 line/record limit, a warning message will be displayed. Larger files also take longer to import. To keep file size down, do not import the entire database over and over when you are simply modifying or adding records. Simply import the new/modified tags

To import a database:

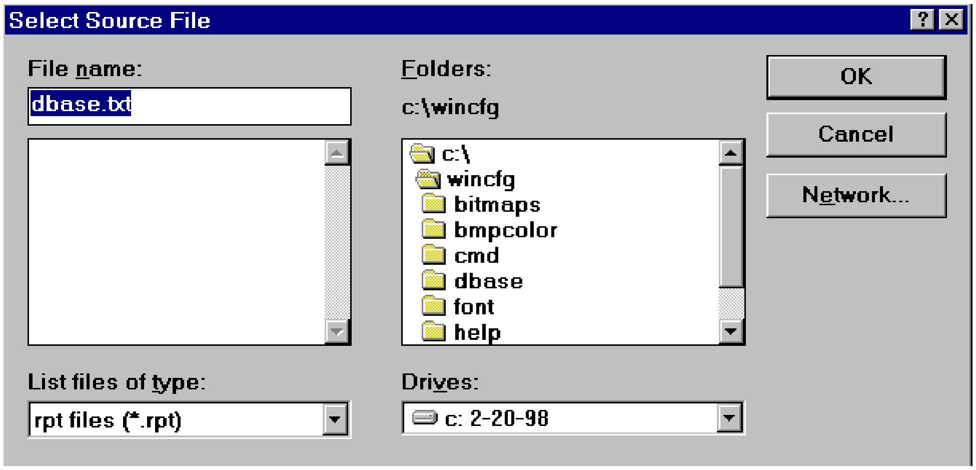
1. Click the Import option on the File menu to display the Import from Text File dialog box.



Text File Name: dbase.rpt

Log File Name: imp.log

2. Click the File Structure icon next to the Text File Name field to display the Select Source File dialog box. Click the arrow in the List Files of Type field to obtain the drop-down list and set the type to *all files* (*.*). Locate the desired file and click on the name. The name will appear in the File Name field. Click OK to return to the Import From Text File dialog box.



File name: dbase.txt

Folders: c:\wincfg

List files of type: rpt files (*.rpt)

Drives: c: 2-20-98

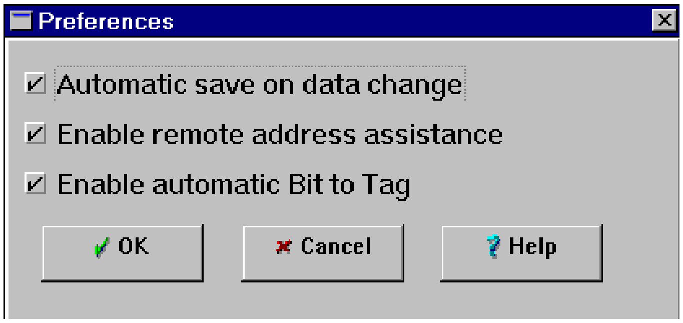
The selected file name will appear in the Text File Name field. Click the arrow on the List Files of Type field to obtain the drop-down list and chose the desired type. The destination type may be different from the source type.

If this database is intended to overwrite an existing database, click on the arrow in the Name field to obtain the drop-down list and choose the desired name. If this database is intended to be a new one, type the desired name in the Name field.

Click OK to initiate the import function.

Setting Database Preferences

To set automatic features for database editing, go to the File menu and select Preferences.



☑ Automatic save on data change
☑ Enable remote address assistance
☑ Enable automatic Bit to Tag

Preferences Dialog Box

Automatic save on data change

Check this box to save changes in the database automatically when a dialog or a page is exited.

Enable remote address assistance

Check this box to enable the remote address wizard. When configuring analog tags, digital tags, and communications block, clicking in a field which requires a remote address causes the wizard to the supply a string similar to the last one used. This speeds entry because the address can usually be customized for the current usage by changing a few characters.

Enable automatic bit to tag

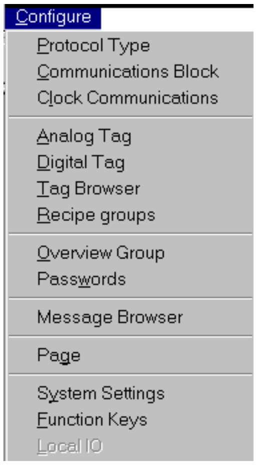
This option pertains to the obsolete Register and Bit display types that were used in versions of WinCfg earlier than 3.0.

If this option is selected, when you open a graphics page, WinCfg will search for Register and Bits tags on that page and give you the option of converting all of them.

If this option is not selected and you attempt to edit an object containing a Bit or Register tag, WinCfg will give you the option of converting the selected item to an Analog or Digital tag. If this option is not selected, the only way you have to locate Bit and Register tags is to attempt to edit all the objects on each page.

Configuring the Database Parameters

Choosing Configure from the Menu Bar accesses the configuration drop-down menu. Active choices depend on the Datapanel model being configured. Some of the menu choices relate to general database items and some relate to the configuration of displays. The general database items are discussed first.

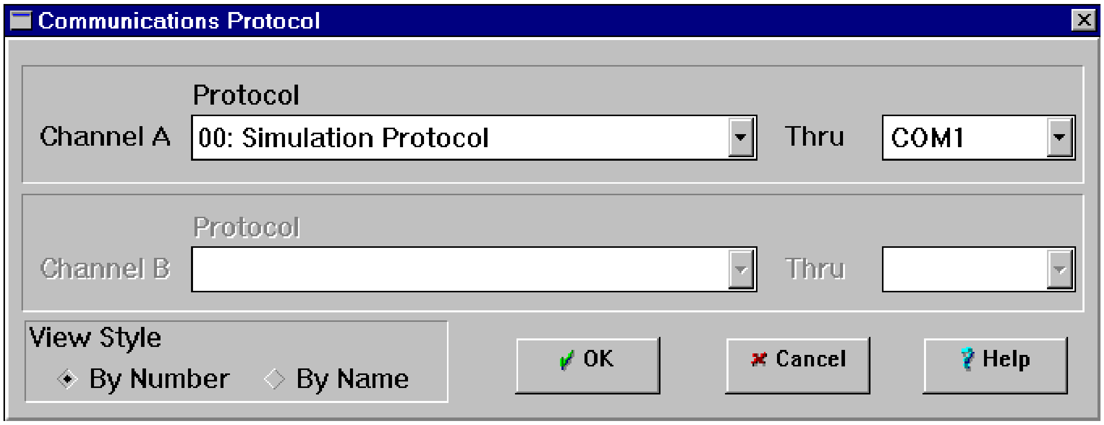

Configure
Protocol Type
Communications Block
Clock Communications
Analog Tag
Digital Tag
Tag Browser
Recipe groups
Overview Group
Passwords
Message Browser
Page
System Settings
Function Keys
Local IO

Protocol Type

Datapanels are designed to interface with PLCs or other controllers for which Datapanel Communications Protocols exist. You will need to select the correct protocol from the list of those supported to ensure that the correct parameters are used when accessing data from the controller.

Multicomms is a feature of Model H, 160, 240E, 320T and 1000 (resistive touch model) Series Datapanels that allows two, possibly different, protocols to be loaded into the panel. Each protocol utilizes a **different communications port** thus allowing two PLCs to be connected to the Datapanel. This feature is limited to panels with two ports.

Select Protocol Type from the Configuration menu or click the toolbar Protocol button to access the Communications Protocol dialog box.



Communications Protocol

Channel A Protocol: 00: Simulation Protocol Thru: COM1

Channel B Protocol: Thru:

View Style: ● By Number ○ By Name

OK
Cancel
Help

Under View Style, click By Number or By Name according to whether you want the list displayed numerically or alphabetically by name.

For each channel, select a protocol and a communications port from the drop-down list.

Note that the Advanced button, not shown in the figure, is active in the Communications Protocol dialog box only when one of the following protocols is selected. It is used to configure additional parameters for these protocols.

- Protocol 91 — Genius (Datapanel 1000, 320T, 160, or 240E model)
- Protocol 68 — SNP/SNPX)
- Protocol 80 — Modicon Host slave

The following restrictions apply to protocols:

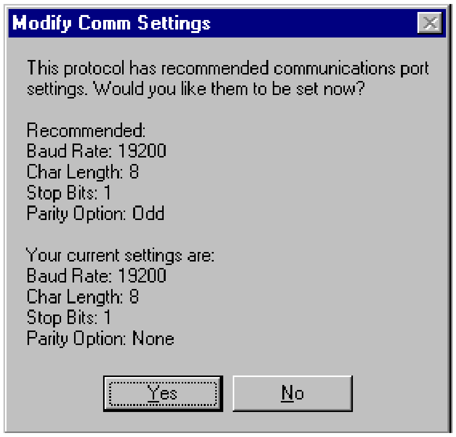
- Certain protocols (#25, #141, & #92) can't be loaded twice and can only be used on COM1.
- The print function on a DP320T will use the parallel port (LPT1) if both ports are configured for Multicomms.
- The embedded panels (160, 240E, and H) will use whichever serial port is free (if any) for printing.
- Note that the Multicomms feature is not available on K, J+, 150 and 240T Datapanels.
- If a protocol is configured for both COM1 and COM2, serial printing is disabled. If COM2 is used, serial printing will occur on COM1. If only COM1 is used, serial printing occurs on COM2 (like normal).

Note: For the 320T Datapanel, if COM1 and COM2 are configured, select Print Using Parallel Port in the System Settings dialog box to print.
The DP1000 models do not support serial printing, only parallel.

When certain protocols are selected, WinCfg displays a Modify Comm Settings dialog box that presents a standard communications port setting appropriate for that selection. To accept these settings, click Yes. To ignore the suggestion, click No.

Note

A complete list of these protocols is available in the pull-down menu for the protocol in the Communications Protocol dialog box. The system will show this dialog automatically.



This protocol has recommended communications port settings. Would you like them to be set now?

Recommended:
Baud Rate: 19200
Char Length: 8
Stop Bits: 1
Parity Option: Odd

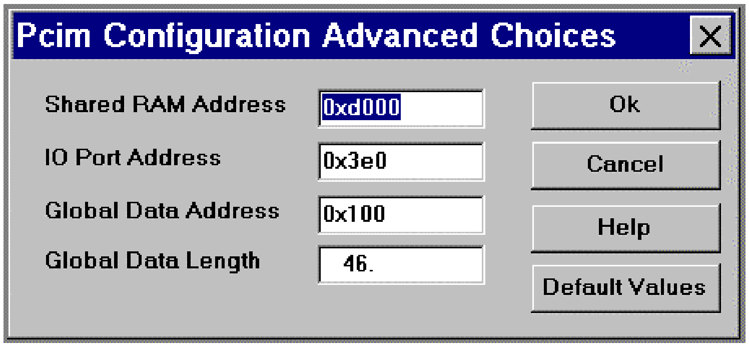
Your current settings are:
Baud Rate: 19200
Char Length: 8
Stop Bits: 1
Parity Option: None

Advanced Settings for Genius Protocol

Advanced choices for Protocol 91 (Genius) are available for the DP1000, DP320T, DP160, and DP240E models.

Note: These settings are only to be used as reference for setting the appropriate switches on the PC104 card. The switch settings on the PC104 card are not overwritten by this dialog box and will still need to be set appropriately. Please refer to the PC104 Genius Installation Guide for assistance in setting these switches.

PCIM Configuration Advanced Choices Dialog Box



Pcim Configuration Advanced Choices

Shared RAM Address: 0xd000
IO Port Address: 0x3e0
Global Data Address: 0x100
Global Data Length: 46.

Shared RAM Address

Displays the required setting on the PC-104 card. Not editable. For information about setting this address on the card, refer to the PCIM documentation.

IO Port Address

Displays the required setting on the PC-104 card. Not editable. For information about setting this address on the card, refer to the PCIM documentation.

Global Data Address

The Global Data Address is the beginning address of the Global Data where a receiving Series Six will place the data. A Series 90-70 or Series 90-30 PLC does not use this reference. This is entered in hexadecimal.

Global Data Length

The Global Data Length is the number of bytes that the Datapanel will output to the controller as global data. It is entered in decimal. Consult the protocol 91 documentation in the Protocol.hlp file for how to write data through this method.

Default Values

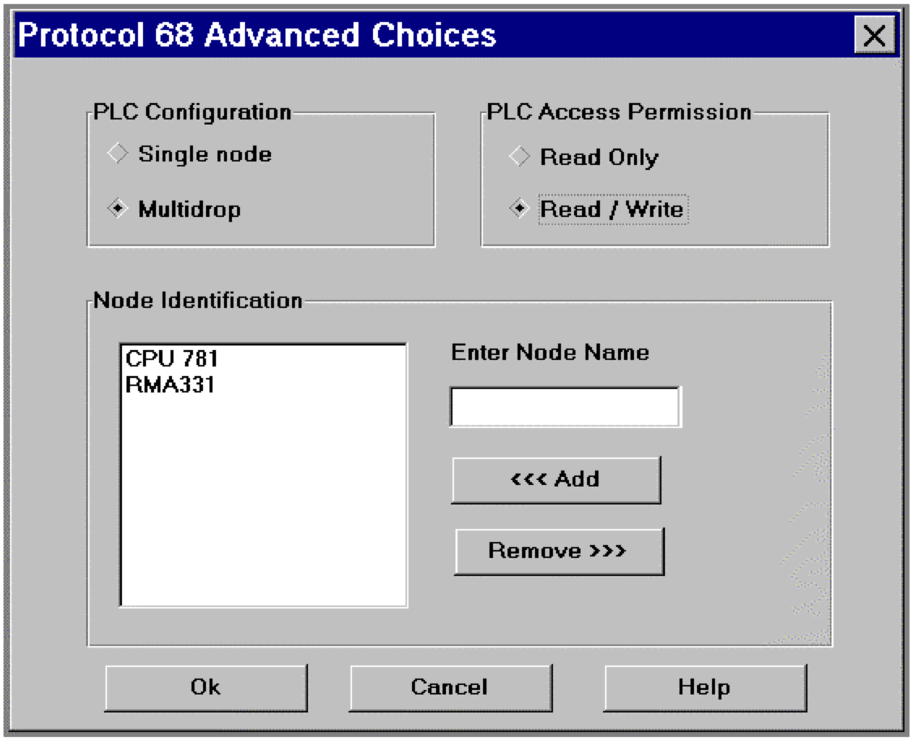
To reset the values in all fields to WinCfg default values, click this button. These defaults will send no global data from the Datapanel.

Advanced Settings for SNP/SNPX Protocol

If the protocol selected is 68 (SNP/SNP-X), an Advanced button appears in the Communications Protocol dialog box.

Protocol 68 Advanced Choices Dialog Box

This dialog box supports fault screens that allow the operator to view Series 90/30/20 PLC and I/O Faults and the run state of the processor. The options in this dialog box are only used with the built-in fault screen featured in certain Datapanel models when the SNP protocol is selected. They are available on all Datapanel models except for DPK, DPJ+, and DP240T.



Protocol 68 Advanced Choices

PLC Configuration
○ Single node
● Multidrop

PLC Access Permission
○ Read Only
● Read / Write

Node Identification
CPU 781
RMA331

Enter Node Name

PLC Configuration

Single Node

If single node is selected, the SNP ID boxes are grayed out and a wildcard is used to determine the SNP ID at runtime.

Multidrop

If a channel of the Datapanel is connected to a multi-drop network, the SNP IDs of the processors that you want to interrogate with the fault screens must be provided in the Node Identification box.

PLC Access Permission

Read Only

If Read Only is selected, PLC operations will be disabled on the Datapanel.

Read/Write

If Read/Write is selected in the database, the operator will be able to clear the fault tables and change the run mode of the processor. If a Level 2 Password is configured on the processor, the operator will be prompted to enter it before these actions can take place.

Node Identification

For multidrop configurations, this box lists nodes that have been identified. To remove a node from the list, select it and click the Remove button. To add a node, type the node name in the Enter Node Name box and click the Add button. Up to 32 SNP IDs may be entered.

Enter Node Name

To add a node name to the Node Identification box, type the new name here and click the Add button.

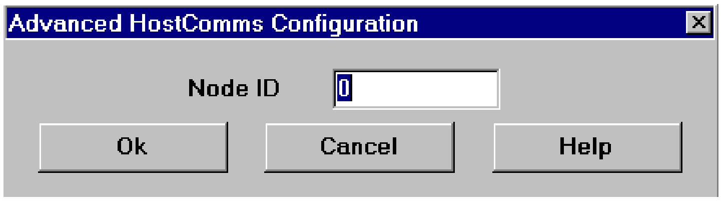
Advanced Settings for Modicon Host Slave

If the protocol selected is 80 (Modicon Host Slave), an ‘Advanced’ button will appear for that channel in the Communications Protocol dialog box.

Advanced HostComms Configuration Dialog Box

Node ID

Identifies the Datapanel’s node ID on the MODBUS network.


Advanced HostComms Configuration
Ok
Cancel
Help

Node ID 0

Configuring Passwords

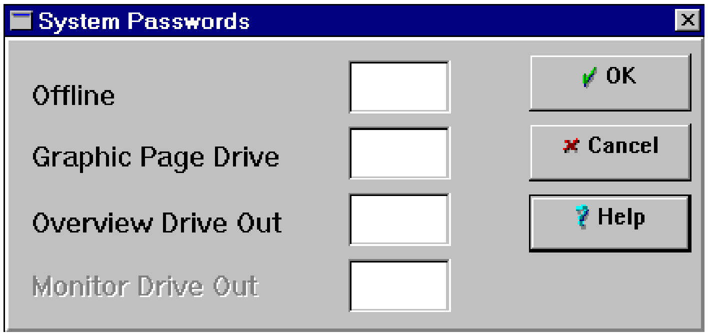
Certain Datapanel options can be password-protected to prevent unauthorized operation or changes. If you do not enter password data, these areas will be unprotected. The options that can be protected are:

- Off-line
- Graphic Page Drive Out
- Overview Drive Out

If you wish to provide password protection, select Passwords from the Configuration drop-down menu or click the Password button to access the System Passwords dialog box.

System Passwords Dialog Box

Enter a password for each area you wish to protect. The password must be numeric and must be no more than six characters long. (Model H passwords may include the letters A—F.) Add the passwords to the database by pressing ↵ or clicking OK. (Monitor Drive Out is not used in this version of WinCfg.)


System Passwords
Offline
Graphic Page Drive
Overview Drive Out
Monitor Drive Out
✓ OK
✗ Cancel
? Help

Note

It is important to keep a copy of the database on floppy or hard disk so that, if the passwords are forgotten, the database can be loaded into WinCfg and the passwords read from the System Passwords dialog box.

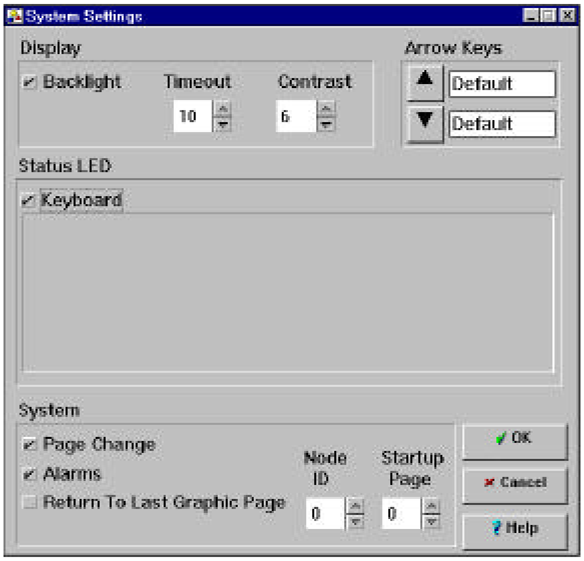
Configuring System Settings

System settings control the operating characteristics of the target Datapanel. These characteristics include Display characteristics, Status LED operation, Alarms, and Page Changes. Arrow key operation can be configured for monochrome models.

Select System Settings from the Configuration drop-down menu or click on the System Setting button to access the System Setting dialog box. The dialog box is divided into four sections:

- Display
- Status LED
- System
- Arrow Keys (monochrome models only)

The configuration will become active when the database is downloaded to the Datapanel.



Display

☑ Backlight

Timeout: 10

Contrast: 6

Arrow Keys

▲ Default

▼ Default

Status LED

☑ Keyboard

System

☑ Page Change

☑ Alarms

☐ Return To Last Graphic Page

Node ID: 0

Startup Page: 0

System Settings Dialog Box

Display

Backlight

Click the Backlight checkbox to enable use of the backlight. If this box is checked, Timeout can be configured.

Timeout

Sets the time (minutes) the backlight remains on if the Datapanel is inactive. If this value is set to zero, the backlight will stay on constantly. If the Datapanel remains inactive for a period exceeding the Timeout configuration time, the backlight will go off. The light can be re-activated by pressing any key on the keypad or touching a touch region on touch models.

Contrast

To set the contrast of the LCD display, select a value in the Contrast box.

Status LED

In the Status LED section, when the Keyboard checkbox is selected, the LED blinks and the annunciator on the Datapanel beeps each time a key is pressed or the touch screen is touched. When the Keyboard option is not selected, the Datapanel Tags option is active.

The Datapanel Tags option allows the Status LED to be configured as a User Status LED to produce a visible warning that some condition or event has occurred in the controller. The LED can be configured to operate in any one of three ways: steady, slow flash (once every 2 seconds), and fast flash (once every second). All three modes are disabled by default, as indicated by blank or empty boxes. One of the options may be enabled by entering the tag related to the event being monitored. When enabled, the LED will not be lit if the tag value is zero, but will be active when the tag value becomes 1 and will continue to be active until the tag value is reset to zero. All three of the options can be activated. The display response is prioritized so that the fast flash status takes precedence over the slow flash status and the slow flash status takes precedence over the steady status.

System

The System Section sets the Datapanel characteristics that the operator will see. (See “Operator Customization”).

Page Change

Click the checkbox if you want the operator to be able to access to different pages by using the up and down arrow keys or by using *page number* + ↵. If Page Change is not selected, embedded F-keys and touch regions become the only means of navigation on the system.

Alarm

Click the Alarms checkbox if you want alarms enabled.

Return To Last Page

Click this checkbox if you want the Datapanel display to return to the last-used page after viewing an alternative display, such as an overview page.

Print Using Parallel Port

This option is available only for the Model 320 type databases. When checked it allows the use of the parallel port for printing instead of the default port, Com2. This setting is ignored if a protocol has been configured for COM2 (Multicomms). In this case all printing is via LPT1.

Node ID

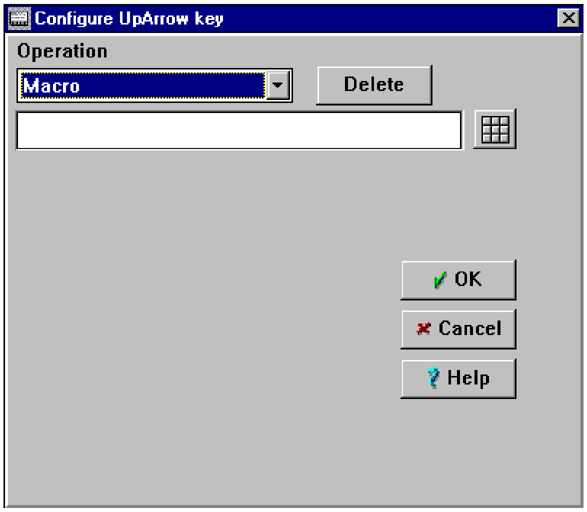
A Node ID is required if the Datapanel is operating on a network with more than one PLC and one Datapanel. The Node ID is a unique network identifier for the Datapanel. The Node ID may be omitted if not required.

Startup Page

Enter a number here if you want a specific page displayed when the Datapanel is started up or when returning from off-line. If no startup page is specified (default = 0), the Datapanel logo page is displayed at startup or when going on-line.

Arrow Keys

This section is present in the dialog box only for monochrome Datapanel models. For these models, the arrow keys can be configured to perform certain operations in the same manner that F-keys can. When this section is initially presented, the labels for both the up arrow and the down arrow will be "Default". Clicking on the Up arrow or the Down arrow opens the Configure UpArrow Key dialog box or the Configure DownArrow dialog box as appropriate. These dialog boxes can be used to configure the keys to perform these output operations:



Operation: Macro

- Macro
- Ramp
- Jog
- Toggle
- Direct Write
- Recipe Load/Transfer

Refer to Chapter 8 for details on the purpose and configuration of these operations. When the arrow keys have been configured, the label will read "Configured". If the arrow keys are not configured, they perform their normal functions.

Operator Customization

After configuration, the settings for LCD Contrast, Backlight, and Backlight Timer can be changed at the Datapanel by the operator to suit individual preferences. Changes made to the settings in this way are saved in memory and become the new default settings at start-up, overriding the values stored in the database when configured by WinCfg. The original configured values will be restored if the database is downloaded from WinCfg.

Alarm Enable is an off-line option. If it is password protected during configuration, it will not be available unless the operator has been given the password. Password access is usually limited to people designated as system administrators.

More Information

Clock Communications	See “Clock Communications” in Chapter 9.
Communications Blocks	See “Communications Blocks” in Chapter 9
Analog Tag	See “Configuring Analog Tags” in Chapter 5.
Digital Tag	See “Configuring Digital Tags” in Chapter 5.
Overview Group	See “Configuring Overview Groups” in Chapter 5.
Page	See “Initial Page Design,” Chapter 6.
Function Keys	See “Configuring Operator Input,” Chapter 8.
Local IO	This function is not implemented in this release of WinCfg.

Chapter

5

Configuring Tags, Groups, and Message Tables

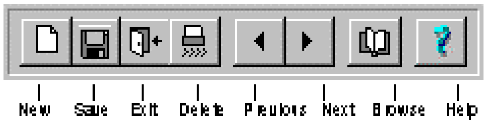
This chapter describes how to configure analog and digital tags, overview groups, recipe groups, and message tables.

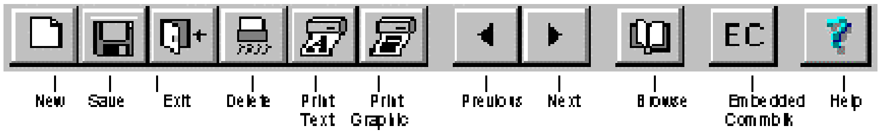
Tags are the Datapanel specification of controller data to be accessed and processed by the Datapanel. The tag includes information on the controller address of the data, nature of the data (analog or digital), scaling requirements, and alarm limits. Tags are identified by a user-defined alphanumeric tag. Meaningful tag names aid the user in configuring the database and the operator in using the Datapanel for process control. A tag browser provides easy reference and selection of tags for configuring graphic pages and other Datapanel functions. The dialog boxes have tool bars that provide easy access to common functions.

Overview groups can be used to display selected tags together. Up to 100 groups can be configured, each containing a maximum of 10 tags (5 tags maximum for Datapanels 150 and 160). The tags selected for inclusion in a group can be either analog or digital or a mixture of both. The operator can access these groups by using the function keys or touch regions on the Datapanel and selecting the Overview page.

Recipe groups provide a means of defining blocks of data values to be sent to defined address blocks in a target device.

The normal Windows cut/copy/paste functions can be used on many fields, tags, etc.





Remote Address Wizard

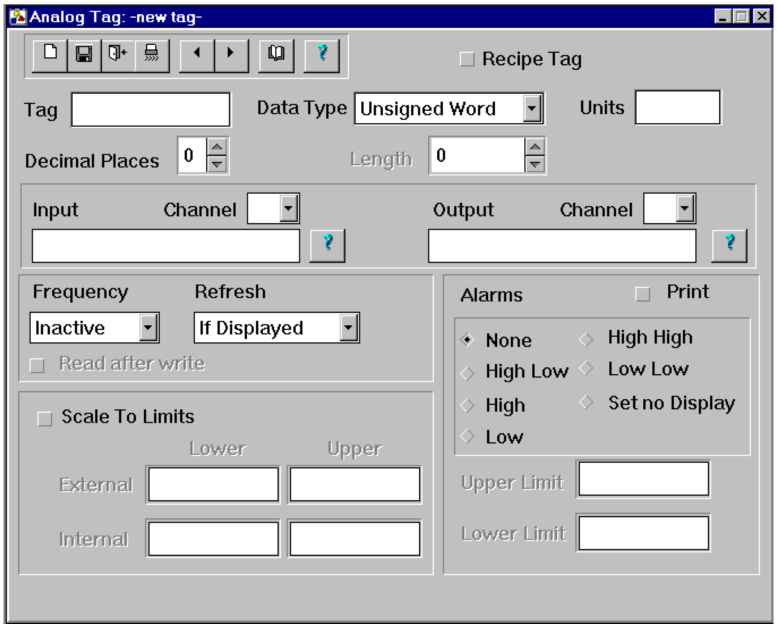
When configuring analog tags, digital tags, and communications blocks, clicking in a field which requires a remote address causes the remote address wizard to supply a string similar to the last one used. This speeds address entry because you can usually customize the address the current use by changing a few characters. To turn this feature on or off, select Preferences from the File menu.

Configuring Analog Tags

Click the WinCfg Main Menu toolbar Analog Tags button (not the page design button) to access the Analog Tag dialog box. You can configure an analog tag as a generic analog tag or as a recipe tag, which can be used in a recipe group.

You can configure the following information in this dialog box. (If Recipe Tag is selected, the input remote address, frequency info, and alarms are all disabled. Scaling, output address, data type, length, and decimal places can still be configured.)

- Data Description
- Input/Output (For recipe tags, Output Channel must be configured, Input Channel disabled)
- Frequency/Refresh (disabled for recipe tags)
- Scaling
- Alarms (disabled for recipe tags)



Analog Tag: -new tag-

☐ Recipe Tag

Tag

Data Type: Unsigned Word

Units

Decimal Places: 0

Length: 0

Input Channel

Output Channel

Frequency: Inactive

Refresh: If Displayed

☐ Read after write

☐ Scale To Limits

Lower / Upper

External

Internal

Alarms ☐ Print

● None ○ High High

○ High Low ○ Low Low

○ High ○ Set no Display

○ Low

Upper Limit

Lower Limit

Data Description

Tag

(Required) To edit an existing tag, click the Browser button to access the tag browser and select a tag name from the browser list. Otherwise, enter a descriptive alphanumeric name in the Tag field. The name is limited to a maximum of 32 characters.

Data Type

(Required) Click the arrow on the Data Type field to access a drop-down list of data types. Select by clicking on the desired type. Available types are:

Type	Range
Unsigned Word	0 to 65,535
Signed Word	-32,768 to +32,767
Unsigned Dword	0 to 4,294,967,295
Signed Dword	-2,147,483,648 to +2,147,483,647
Floating point	3.4×10^{-38} to $3.4 \times 10^{+38}$
Text	

Units

(Optional) Enter an alphanumeric name in the Units field for the data units to be used when displaying the engineering units of the data (e.g., psi, Ft., Gal., Boxes). The name is limited to a maximum of ten characters.

Decimal Places

(Optional) Enter the number of data decimal places in the Decimal Places field. This determines how the data is displayed. If the controller raw data is 12345 and the Decimal Places field is set to three, the data will be displayed as 12.345. If the field is set to zero, the data will be displayed as 12345.

Length

(Required for Text data type) When Text is chosen as the data type, the Length field is activated. The length is the number of characters that are reserved in the PLC. It should be the number of characters in the largest string plus one for a NULL terminator. (The length of the text to be displayed can be controlled by the width box on the graphics page.)

Input/Output

The Input (required for generic tag) and Output (required for recipe tag) fields are used to provide the information necessary for the transfer of data to and from the controller. The Input field is the data address to read from. The Output field is the data address to write to. The format required for these fields is controller-dependent and will be specified in the controller literature. Sample forms of these addresses are shown in the following table. You can get help for the field by clicking the Help button. ?

Table 5-1 Sample Protocol Address Forms

Controller Type	Analog Address	Digital Address
GE SNP-X (Protocol #68)	?%R00100,X,,	?%Q00123,X,,
Allen Bradley SLC 500 (Protocol #92)	07/00/T04:004/02	14/00/B03:001/08
Modicon Modbus RTU (Protocol #15)	001HR1234	002CL0064

The analog remote address boxes accept a value of Rxxxx to specify the Datapanel register table. The digital remote address boxes accept a value of Bxxxx to specify the Datapanel bit table. The xxxx must be zero padded to four places (Register 1 is R0001 not R1). The sizes of these tables are given in the Datapanel manual and vary by model.

Channel

Specifies which channel the remote address is connected to (A or B). The letters A and B refer to the settings made in the Communications Protocol dialog box and are not COM1 and COM2 (you can reverse them so that A is COM2 and B is a PC-104 card for example).

Frequency/Refresh Fields

Click the arrow on the Refresh field to access a drop-down list of available data display control choices:

- If Displayed. - Data is collected from the controller only if the configured tag is currently being viewed by the operator.
- Page Change. - Data is collected each time an operator displays a screen showing the tag. The data will not be collected again until the same screen is re-displayed or a new screen with the same tag is displayed.
- Continuously. - Data is collected at the frequency specified, regardless of the current display.

Select by clicking on the desired condition.

Click the arrow on the Frequency field to access a drop-down list of available rates of data refresh subject to the control choice made in the Refresh field. The available choices are: Inactive, .1, .2, .3, .4, .5, .6, .7, .8, .9, 1, 2, 5, 10, 30, 60 (seconds). Select by clicking on the desired frequency. The default value is Inactive. A value must be specified for the tag to work.

(The frequency box is grayed out if the input address is an internal Datapanel address.)

Scaling

This section determines how the raw controller (external) data will be stored in the Datapanel (internal). This provides for scaling external data to engineering units. Click the Scale To Limits checkbox if you want scaling of this data. If the box is not checked, no scaling will be performed and the value of the Datapanel data will be the same as the controller value. If you clicked the check box, enter the appropriate upper and lower limits of the external data, and the corresponding upper and lower values in engineering units.

If the internal and external limits are the same and scaling is enabled, the Datapanel will not allow the operator to enter a value that is outside of this range. The configuration can use this feature to provide limit checking rather than/or in addition to scaling. For example, if you want to limit an analog value to between 0 and 100, you can set internal and external values at 0 to 100 and the operator will not be allowed to enter values outside this range.

External limits are the limits of the possible range for the variable in the controller. Internal limits define the range to which you want to scale the external value. The value collected from the controller will be scaled linearly before it is used for any display. Examples of limits and scaled values are shown in the following table.

Table 5-2. Example of Limits and Scaling

	Limits	
	Lower	**Upper**
External	100	600
Internal	0	100

	Sample Values		
	1	**2**	**3**
External (measured)	100	350	500
Internal (displayed)	0	50	80

Alarms

(Optional) This section is used to select the type of alarm desired and to set the limits for that alarm. (Alarms can not be set for a recipe tag.) You can set a maximum of two alarms for each tag. However, the same point may be defined with a different tag name and additional alarms assigned to that tag. It is possible to set two high alarms or two low alarms. The lower value of the double high alarm is called simply High, while the higher value of the double high alarm is called High High. Similarly, the higher value of the double low alarm is called Low, while the lower value of the double low alarm is called Low Low. The checkboxes are defined in the following table.

Enter the desired alarm limits in the Upper Limit and Lower Limit fields. If an invalid value is entered, the system displays an error message and a new value must be entered. The alarm limits must be within the internal limits.

You may want to use separate tags for HIGH and LOW alarming on critical data points. The handling of alarms is such that if a HIGH Alarm has not been acknowledged, the LOW Alarm cannot be activated, and vice versa. Using separate tags avoids this limitation.

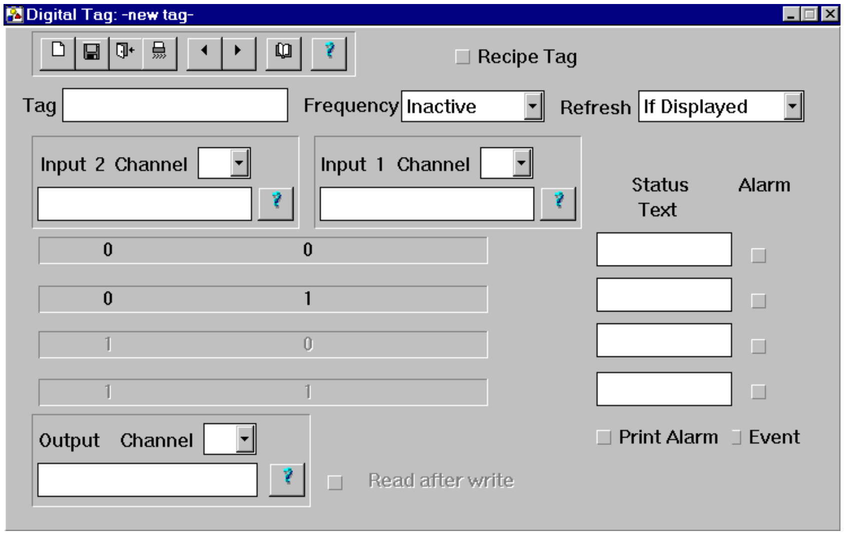
All alarm types except for the 'Set no Display' type trigger the Global alarm bit and also set an alarm display in the Alarm Log page of your Datapanel.

Table 5-3. Alarm Type Definitions

Type	Meaning
No Alarms	No Alarms are set for this tag.
High Low Alarming	Alarm condition occurs when High or Low limits are violated.
High Alarming	Alarm condition occurs when a High limit is violated.
Low Alarming	Alarm condition occurs when a Low limit is violated.
High High Alarming	Alarm condition occurs when High High limit is violated. (The High limit would have been previously violated.)
Low Low Alarming	Alarm condition occurs when Low Low limit is violated. (The Low limit would have been previously violated.)
Set Alarm No Display	Alarms will not be displayed in the System Alarm Log or the Mini Alarm Log. However, the limits can trigger changes in shape or color in a Graphic Display.
Print	Alarms will be output to the printer as they occur.

Configuring Digital Tags

To access the Digital Tag dialog box, click the Digital Tags button on the WinCfg main toolbar. Each digital tag can be assigned up to two data addresses.



Digital Tag: -new tag-

☐ Recipe Tag

Frequency: Inactive

Refresh: If Displayed

Input 2	Input 1
0	0
0	1
1	0
1	1

☐ Print Alarm ☐ Event

☐ Read after write

You can configure a digital tag as a generic digital tag or as a recipe tag, which can be used in a recipe group. (If the Recipe Tag box is selected, alarms, the input address fields, and read after write are disabled.) The operation of the Tag, Frequency, Refresh, Input, and Output fields are the same as described in the Input/O section of “Configuring Analog Tags” on page 5-4.

The Datapanel monitors the status of two discrete controller locations to determine the state of the digital tag. For each input, select which channel the Remote Address is connected to (A or B). These channels are configured in the Communications Protocol dialog box. Enter the address of the two locations in the Input 1 (required) and Input 2 (optional) fields. Either of the two locations may have a value of 0 or 1 only. Thus, a digital tag can be in any one of four states determined by the value of the two source data locations allocated to it. Digital recipe tags are always only one bit.

Each state can have a descriptive Status Text label associated with it, (e.g. FAULT, OPEN, CLOSED or INTRANS). Enter a maximum of 32 alphanumeric characters in each desired label. Click the appropriate Alarm checkboxes to enable the alarms for the desired states.

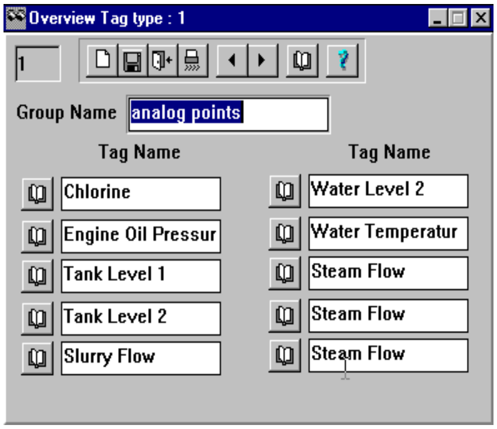
If you want to use the Drive Out feature to change an address within the controller, enter the appropriate output address in the Output field.

Click the Read after Write checkbox if you want a confirming read of the data after writing new values to the controller. To print a message when the tag changes state, click the Event button. If you want alarms to be output to the printer as they occur, click the Print Alarm button.

Note: If the tag is to be used in a jog or toggle operation, only use Input 1. If tag is to be used in a toggle operation, check the Read after Write box.

A check in the Print alarms box will send the alarm data out to a designated printer port. A check in the Event box will output each change of state to a printer as an Event.

Configuring Overview Groups



1

Group Name: analog points

Tag Name	Tag Name
Chlorine	Water Level 2
Engine Oil Pressur	Water Temperatur
Tank Level 1	Steam Flow
Tank Level 2	Steam Flow
Slurry Flow	Steam Flow

Click the WinCfg Main Menu toolbar Overview Groups button to access the Overview Tag Type dialog box.

If you are editing an existing group, click on the Browser button to access the group browser.

Overview Groups enables tags that are related in some way to be displayed together. Up to 100 groups can be configured, each containing a maximum of 10 tags (5 tags maximum for Datapanels 150 and 160). The tags selected for inclusion in a group can be either analog or digital or a mixture of both. The operator can access these groups by using the function keys or touch regions on the Datapanel and selecting the Overview page.

The number in the upper left hand corner indicates the group you are currently configuring.

Using the toolbar,

- To create a new group, click the New button.
- To select an existing group, use the Previous and Next buttons or click the Browse button to access the Overview Group dialog box.
- To save without closing the dialog box, click the Save button. To save the group and close the dialog box, click the Close button.
- To delete the currently selected group, click the Delete button.

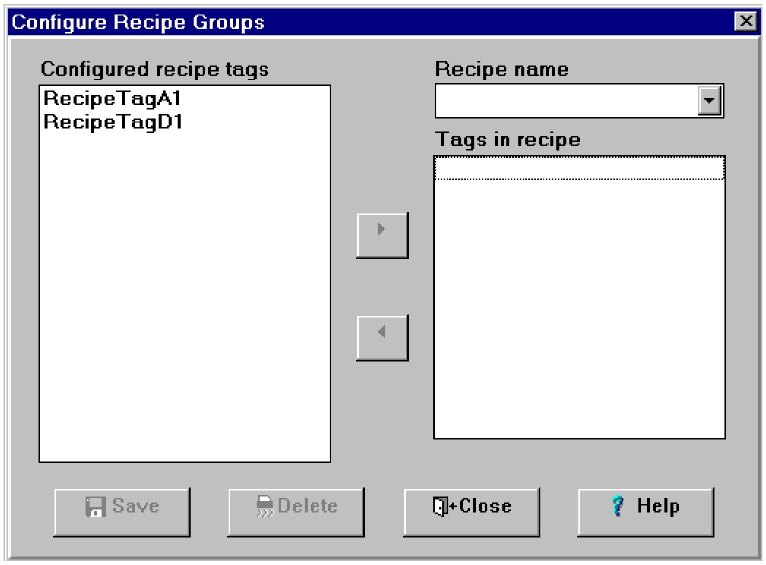
Enter an identifying name in the Group Name field. A maximum of 19 alphanumeric characters is permitted.

For each of the ten tag name fields, either type in the desired tag name or click the associated browser button to pick from a list of tags.

Configuring Recipe Groups

Recipe groups provide a means of defining blocks of data addresses in a target device and blocks of data values to be sent to that device. You can configure Recipe Tags and select a number of recipe tags to build a Recipe Group. A set of data values can then be used with these tags. A button, touch area, or function key, called a Recipe Object, can be configured to load a recipe data set into a recipe group. Another recipe object will transfer the data values through the tags to the device. A recipe object can also be configured to first load and then transfer the data values by a single touch or press of the recipe object.

To create a recipe group, click the Recipe Groups button on the main toolbar or select Recipe Groups from the Configure menu. The Configure Recipe Groups dialog box will appear.



RecipeTagA1
RecipeTagD1

Configure Recipe Groups Dialog Box

Configured Recipe Tags

Lists all configured analog and digital recipe tags

Recipe Name

To configure a new recipe group, type an alphanumeric name in this box. To edit an existing group, select the name from the drop down list.

Tags in Recipe

Displays the contents of the Recipe Group. To add a tag, select it in the Configured Tags list and click the right arrow. To remove a tag from the recipe, select it in this list and click the left arrow. To delete the Recipe Group, click the Delete button.

When you have finished editing the Recipe Group, click the Close button.

Configuring Message Tables

Message Tables store multiple text strings for display according to the value of a tag. Maintaining the messages in a library reduces the database space requirements and speeds the configuration process. The library allows you to create a number of tables for convenient grouping of related messages. A different table must be assigned to each group of values and texts. The same table can be used on multiple pages and with multiple tags. When the message table is configured on the page, the appropriate message will appear on the Datapanel depending on the value of the tag. A hypothetical message table for an analog representation of temperature is shown below.

Message tables are created and changed using the Message Browser. To access the browser,

- Select Message Browser from the Configure menu, or
- Click the Browser icon in the Message Display dialog box.

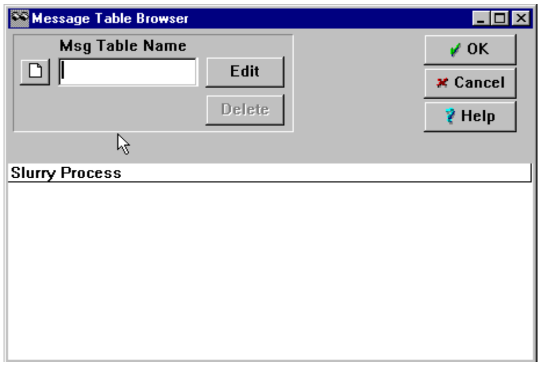
Sample Message Table

Tag Value	Message
0	Warning - critically low
10	Caution - excessively low
20	Low
30	Normal
40	High
50	Caution - excessively high
60	Warning - critically high
70	Danger - shut down process

Creating a New Message Table

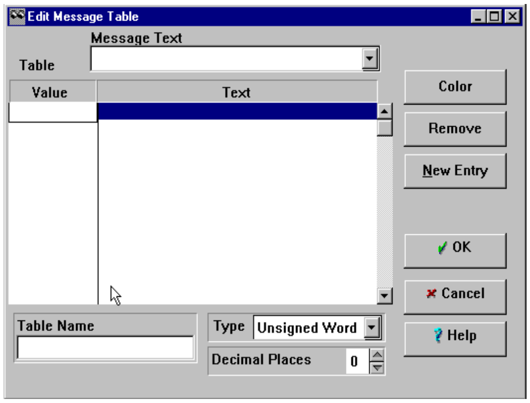
To create a new table:

- Open the Message Table Browser dialog box.
- Type the table name in the MSG Table Name field.
- Click Edit. The Edit Message Table dialog box will appear.



Creating a New Message

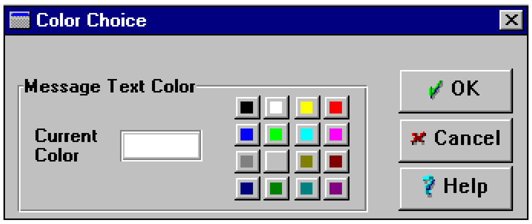
To create a new message:


Edit Message Table
Message Text
Table
Value
Text
Color
Remove
New Entry
OK
Cancel
Help
Table Name

Type: Unsigned Word

Decimal Places: 0

- Open the Edit Message Table dialog box if it is not already open. (Click the Edit button in the Message Table Browser dialog box.)
- Click New Entry.
- Click the down-arrow on the right of the TYPE field to access a drop-down list of data types. Click the desired type.
- **Analog**. In the Value field, enter the tag value associated with the message. In the Text field, enter the message as it is to appear on the page. The message can be more than one line. Use the ENTER key to create a new line. Click on the up-down arrows on the right of the Decimal Places field to obtain the desired number of places.


Color Choice
Message Text Color
Current Color
OK
Cancel
Help

- **Digital.** You can enter a separate message for each of the four possible digital values.
- If the Datapanel model supports color, click Color to access the Color Choice dialog box. Select desired color. Click OK.
- Click OK to exit.

Editing or Deleting a Message Table

To edit a message table:

- Open the Message Table Browser dialog box.
- Select the table name in the list of tables.
- Click Edit. The Edit Message Table dialog box will appear.

To delete a message table:

- Open the Message Table Browser dialog box.
- Select the table name in the list of tables.
- Click Delete. Click OK to exit.

Editing or Deleting a Message

To edit a message:

- Open the Edit Message Table dialog box is it is not already open.
- Select the message from the list of messages.
- Change the desired fields, click OK to exit.

To delete a message:

- Open the Edit Message Table dialog box is it is not already open.
- Select the message from the list of messages.
- Click Remove. Click OK to exit.

Chapter 6

Initial Page Design

This chapter, along with chapters 7and 8, presents a typical procedure for configuration of graphic pages using the tags defined for analog and digital data. The Datapanel has a comprehensive display capability, which is easily implemented through WinCfg software. A Datapanel can have up to 100 graphic pages (200 on Models 320T, 1060, 1062, and 1065). Each page can display scaled data, static text, dynamic text, touch regions, trend charts, and bar graphs, Drive Out, and embedded function keys (except on Models 320T, 1060, 1062, and 1065). Many of the displayed items can be made dynamic, i.e., their appearance is modified by the value of an associated tag. The pages are configured in WinCfg and displayed when the Datapanel is operated in the Run Mode.

See Chapter 11 for a discussion of advanced capabilities and how to use them.

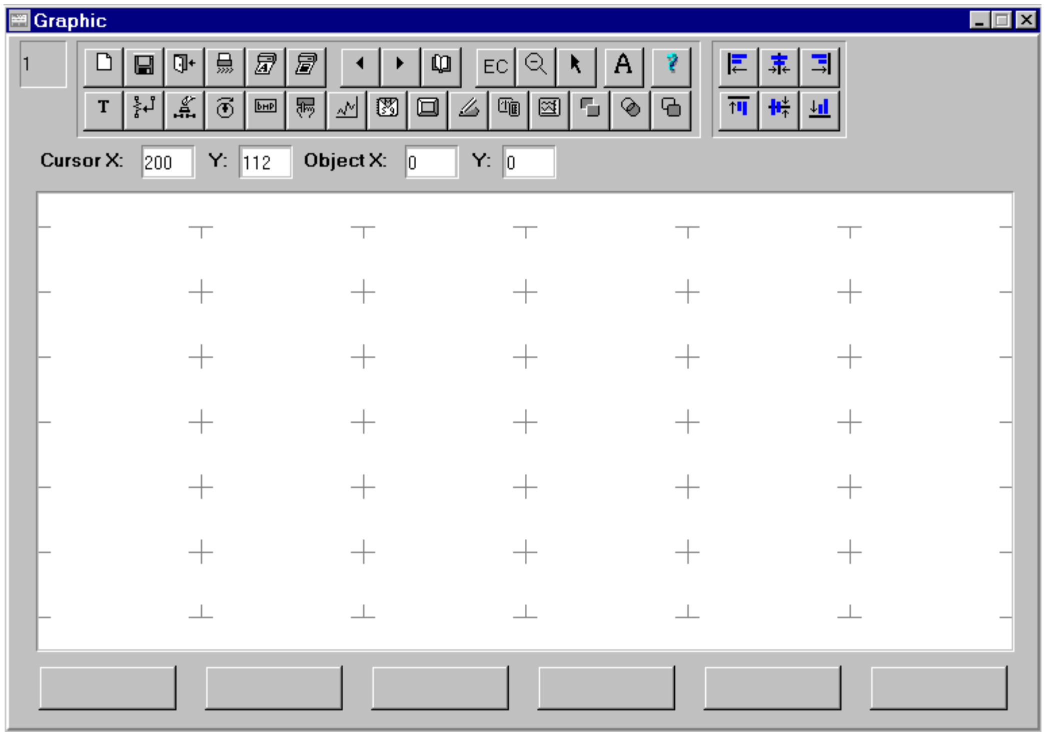
Graphics Page Design Window

Click the Page button to display the Graphic design window. This is where you design the pages to be displayed on the Datapanel. The field in the upper left corner displays the identification number of the displayed page.

The Cursor fields show the present position of the cursor. The Object fields show the present position or size of the selected object in datapanel pixels. If the mouse is clicked on one of the resizing handles, the width and height of the object will be shown. If the mouse is clicked on the other parts of the object, however, the object position (lower-left corner) will be shown instead. Furthermore, the object fields show the datapanel screen size if the mouse click is outside any objects. These fields are used if you want to precisely position or size an object. The fields along the bottom of the box are used to configure custom embedded function keys on those Datapanel models that have function keys. (Some models, such as 1062, do not have function keys.)

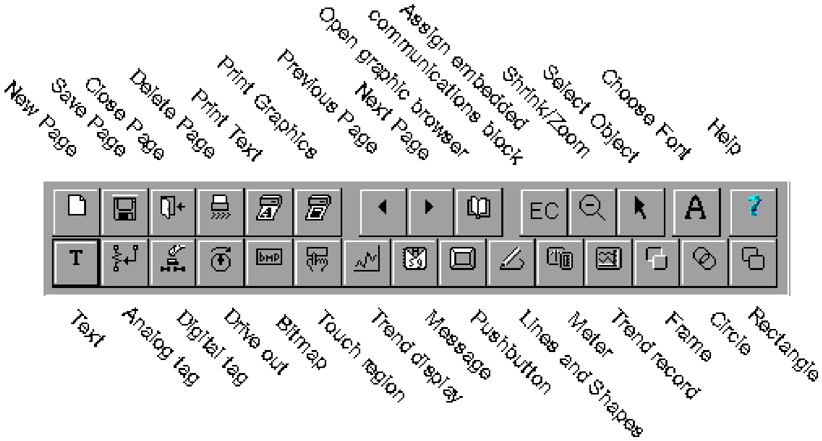
If this is not the first page you have designed for this database, click the Previous or Next button to move between pages until you find the desired page.

To select from a list of available pages, click the Browser button.

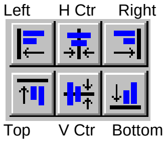


Cursor X: 200 Y: 112 Object X: 0 Y: 0

The upper tool bar provides easy access to functions that are common to many WinCfg dialog boxes. The lower tool bar provides easy access to functions used to create graphic pages.

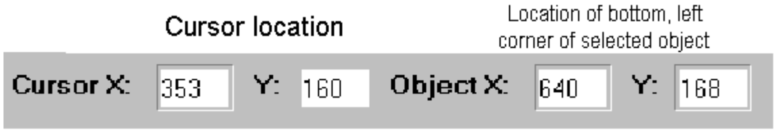

New Page
Save Page
Close Page
Delete Page
Print Text
Print Graphics
Previous Page
Next Page
Open graphic browser
Assign embedded communications block
Shrink/Zoom
Select Object
Choose Font
Help
EC
A
T
Text
Analog tag
Digital tag
Drive out
Bitmap
Touch region
Trend display
Message
Pushbutton
Lines and Shapes
Meter
Trend record
Frame
Circle
Rectangle

The alignment toolbar is used to align selected objects with respect to each other.


Left
H Ctr
Right
Top
V Ctr
Bottom

Alignment Tool

The cursor location fields indicate the current location of the mouse pointer. The object location fields indicate the location lower left corner of the selected object. Coordinates are measured from the lower left corner of the Graphics page.

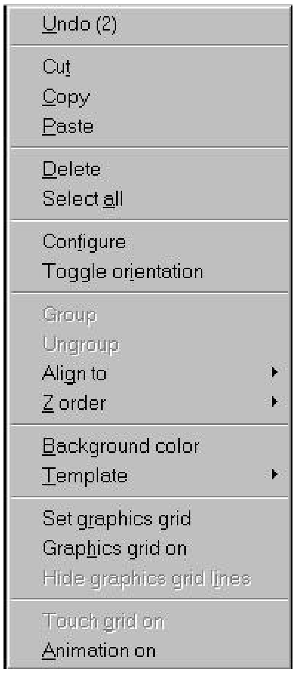


Cursor location

Location of bottom, left corner of selected object

Cursor X: 353 Y: 160 Object X: 640 Y: 168

Using the Right Mouse Button Menu



When the mouse pointer is within the graphic page, clicking the right mouse button accesses the pop-up menu shown to the right. The choices that are available depend on whether an object is selected and the type of object selected.

Undo, **Cut**, **Copy**, **Paste**, **Delete**, and **Select all** perform the same functions as the corresponding items on the Edit menu.

Configure opens a Configure dialog box for the selected object (same as double-clicking on the selected object).

Toggle orientation rotates the selected object(s) 90 degrees to the left or returns the object to the vertical position.

Group and **Ungroup** perform grouping operations on selected objects.

Align to allows you to select left, right, top, bottom, horizontal center, and vertical center alignment for selected objects.

Z order provides the ability to rearrange the stacking order of graphics. When this item is selected, a drop-down list will appear with three selections:

> ***Send to back*** causes the selected graphic(s) to be moved behind all other graphics.
>
> ***Shuffle overlaid*** causes the stacking order of overlaid items to be changed by bringing the graphic on the bottom up to the top.
>
> ***Edit Z order*** allows you to arrange the stacking order without limitation. When this item is selected, the Overlaying Order dialog box will appear, displaying the selected objects. Using the drag-and-drop technique, the objects in the list can be placed in any order.

Background color allows you to select the screen color for the current page (for color Datapanel models). Opens the Color Choice dialog box.

Template allows you to add or delete a template on the page. Selecting Add opens the Graphic Browser dialog box.

Set graphics grid configures the snap-to-grid feature of WinCfg. Opens the Set Graphics Grid dialog box.

Graphics grid on turns the WinCfg snap-to-grid feature on and off.

Hide/show graphics grid lines Available if Show Grid lines is selected in the Set Graphics Grid dialog box. Turns the display of grid lines on and off.

Touch grid on toggles the touch grid display on the page on or off for the model 240T Datapanel.

Animation on causes multi-value graphics to cycle through the entire range of values. This function provides a simulation of hat the Datapanel display will look like in operation. It is useful for verifying that there are no unexpected visual anomalies on the display.

Operations Common to all Objects on the Page

All the objects you place on the page are controlled by the operations listed below. Most of these are the normal Windows operations.

Selecting Objects

- Click the object with the Selection Tool.
- Click and hold the left mouse button while you draw a rectangle around the object or objects you want to select.
- Holding the Control key (CTRL) down while left-clicking on an unselected object will add the object to the current selection. Holding the Control key (CTRL) down while left-clicking on a selected object will deselect the object..

Sizing Objects

- Click-and-drag the handles on the object in the normal Windows manner.

Moving Objects

- Place the mouse pointer over the object so that the pointer turns to a hand. ✋ Click and drag in the normal Windows manner.
- Select the object, then press one of the arrow keys for the desired movement direction. The object will move one pixel per key-press.

Cut/Copy/Paste

Objects, fields, and tags can be manipulated in the normal Windows manner.

Editing Existing Objects

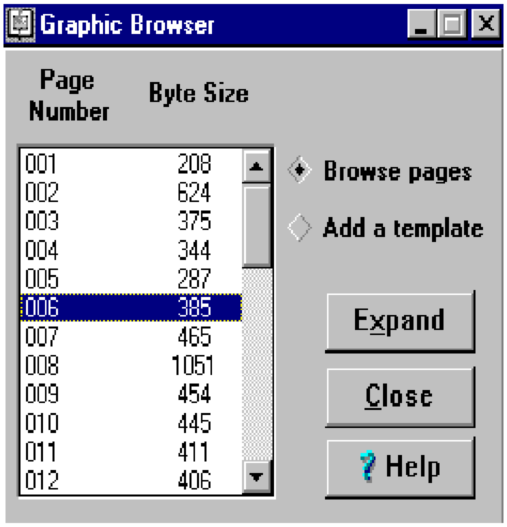
To open the Configure dialog box for an object, double-click on the object or select the object, click the right mouse button and choose Configure from the pop-up menu.

Common Dialog Boxes

Many of the page design operations reference common dialog boxes. The operation of these boxes is described below and not repeated each time they are referenced by a design operation.

Graphic Browser

When a page is displayed, clicking the Browser button will cause the Graphic Browser to appear.



Page Number	Byte Size
001	208
002	624
003	375
004	344
005	287
006	385
007	465
008	1051
009	454
010	445
011	411
012	406

● Browse pages
○ Add a template

Browse Pages

When the Browse Pages option is selected, clicking on a page number causes that page to be displayed.

Add a Template

When the Add a Template option is selected, clicking on a page number causes that page to be selected for adding as a template to the page presently being displayed. The addition of the template occurs when you exit the Graphic Browser.

Expand

Clicking the Expand button causes the list to show all pages, including blank ones. The button legend then changes to Collapse.

Collapse

Clicking the Collapse button causes the list to show only the pages that have been configured.

Tags

Many operations require the entry of a tag name. You can:

Click the Browser button to access the Tag Browser dialog box,

or

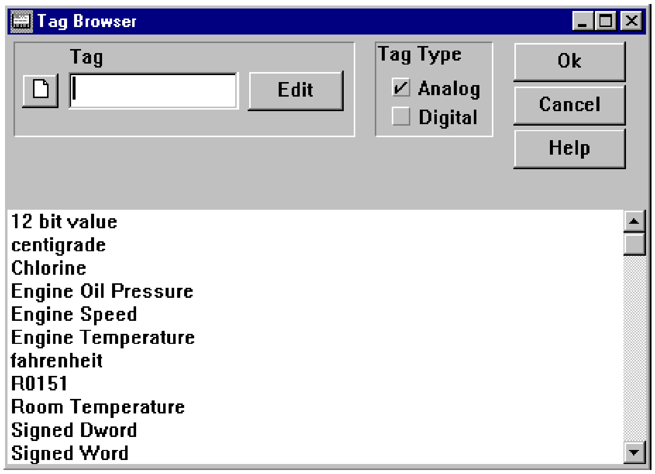
Select Tag Browser from the Configure menu.

Tag Browser Dialog Box

Click the checkbox for Analog or Digital tag as desired.

Scrolling

To find a tag name, scroll through the tag name list by using the up-down arrow keys, sliding the scroll bar, or clicking the up-down arrows on the scroll bar. PAGE UP and PAGE DOWN keys show the “pages” of the list. HOME and END keys move to the first or last name.



12 bit value
centigrade
Chlorine
Engine Oil Pressure
Engine Speed
Engine Temperature
fahrenheit
R0151
Room Temperature
Signed Dword
Signed Word

Typing

You can type the name or if you know the beginning of the name, type the first letters of the name. As you type, the displayed list updates to the location corresponding to the text you have typed. When the desired name is on the screen, proceed to the selection instructions below.

Selecting

Select the desired tag name using the up-down keys to move the highlight to the desired name. . Press ↵ or click OK to return to the previous dialog box. Alternatively, double click the mouse on the desired name.

Editing

To edit an existing tag, highlight the tag name and click the Edit button, or just double-click on the tag name. The dialog box for the selected Tag Type will appear.

Creating a New Tag

To create a new tag, select the tag type and click the new button. The dialog box for the selected Tag Type will appear.

Font Selection

You can select a font for any display that contains text, such as a text object, message display, analog tag, or digital tag display. Select the object and then click the Choose Font button. The Font dialog box will open.

Font Dialog Box

This dialog box allows you to choose a font for a selected text object.

Select Font

Lists the fonts available and indicates which fonts are loaded into the database. (ANSI WinCfg 8x14 is permanent.) When you select a font and click OK, the font is loaded into the database. Each additional font choice that you load uses space in the database.

Once a font is selected, it stays the default font for all new items until it is changed to something else, or WinCfg is closed.

Sample

Provides a preview of the selected font.

Remove from Database

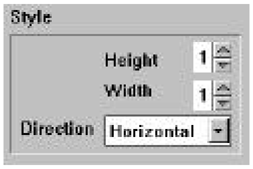
Removes the selected font from the database.

Database Used

Indicates the amount of database space used by all loaded fonts.

Static Attributes of Graphic Objects

Height, Width, Justification, and Direction

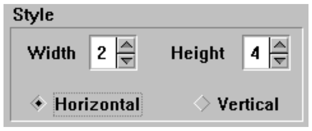


Style

Height 1

Width 1

Direction Horizontal



Style

Width 2

Height 4

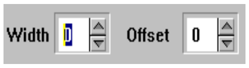
● Horizontal ○ Vertical

This portion of some dialog boxes allows you to define the orientation and size of the displayed Text or Message object.

Direction. Click the arrow on the Direction field to access the drop-down list and click the desired item direction (orientation), horizontal or vertical, or, Click the appropriate checkbox.

Height/Width. Use the up-down arrows on the Height and Width fields to select multiplier values for the height and width of the item.

Width and Offset



Width 0 Offset 0

When the selected field is text or numbers, the Width/Offset fields in the dialog box become active. These fields specify how the field is to be displayed.

- **Width** is used to allocate the number of characters to be displayed. For example, if Width is set to 5, only 5 characters will be displayed for a particular field regardless of how long the string is. The default width value is zero. The meaning of a zero width varies depending on the field being configured.
- **Offset** is used to determine at which character position the display of the text string will start. Setting the Offset to 2 will cause the display to start at the third character of the full text string for that particular field.

Example:

The selected field is 10 characters long.

T	H	E	R	M	I	S	T	E	R

Width is set to 5, Offset is set to 2.

T	H	E	R	M	I	S	T	E	R

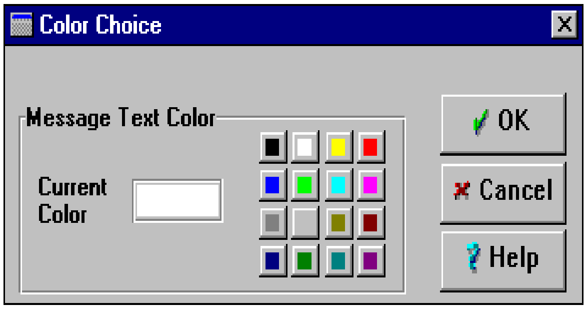
The text string displayed is:

E R M I S

Color

On color Datapanel models, you can select background color for the graphic page and colors for objects. Depending on the type of object, you can select border, background, and text colors. These colors are static, meaning that they do not change. (Background color is the color used to hide or blink the object.) For details about configuring an object's color to change in response to the value of a tag, see Dynamic Display.

Color Choice Dialog Box



The Color Choice dialog box appears as a result of:

- Clicking the Color button on the Edit Message Table dialog box.
- Clicking the Button Text Color button on the Button Operation dialog box. (Button's Text Color field title appears instead of Message Text Color.)
- Clicking Button Color on the Button Operation dialog box and then clicking Modify Bitmap. (Select New Color field title appears instead of Message Text Color.)
- Clicking the Right Mouse button and selecting Background Color. (Background Color field title appears instead of Message Text Color.)

To choose a color, click the desired color. Click OK.

Fields of a Tag

There are many aspects of a tag which can be displayed. These are referred to as *fields* of the tag. Click the arrow on the Field field to access the drop-down list of available fields. The field specifies which aspect of the tag you want to display. Select the appropriate field by double clicking the name, or by single clicking the name and then clicking OK. The items available in the drop-down list will depend on the tag type as shown in the following table. For details, see “Adding an Analog Tag to the Page” and “Adding a Digital Tag to the Page” in Chapter 7.

Table 6-1 Field Types Available

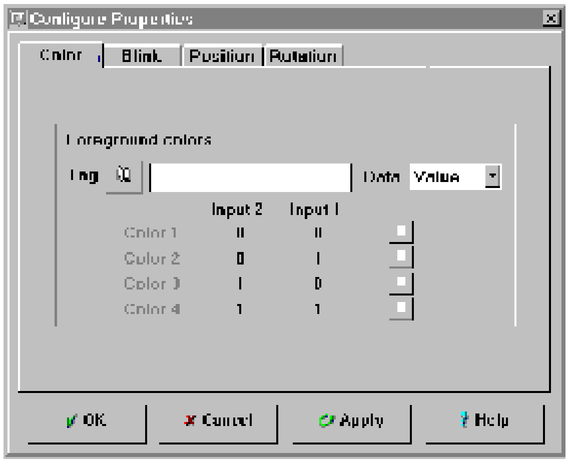
Analog	Digital
Tag Value	Tag Value
External Lower	Status Text 0
External Upper	Status Text 1
Internal Lower	Status Text 2
Internal Upper	Status Text 3
Alarm Lower	Alarm Type
Alarm Upper	Tag Name
Alarm Type	Status

Dynamic Display

You can specify dynamic properties for most display objects. The dynamic properties of a graphic object determine how it is displayed in Run Mode on the Datapanel when the parameters of the associated tag meet the defined conditions, such as certain values or alarms.

To configure dynamic display attributes for a graphic object, first create a new object or select an object and choose Configure from the right mouse popup menu. In the configuration dialog box for the object, click the Properties button. Depending on the type of object selected, the Configure Properties dialog box will display tabs for Color, Blink, Position, Rotation, and Fill attributes.

Color and conditional blinking require either digital tag input or alarm state input from either digital or analog tags, not necessarily the same tag being displayed. Position requires the use of analog tag input.



Data: Value

	Input 2	Input 1
Color 1	0	0
Color 2	0	1
Color 3	1	0
Color 4	1	1

Table 6-2. Configurable Object Attributes

Object	Type	Static Attributes	Dynamic Attributes (Properties)
Text	None	Height, Width, Direction	Color, Blink, Position
Analog Tag	None	Height, Width, Direction	Color, Blink, Position
Digital Tag	None	Height, Width, Direction	Color, Blink, Position
Drive Out	None	Color	None
Bitmap	Static	None	Color, Blink, Position
Bitmap	Discrete	None	Color, Blink, Position
Bitmap	Limit	None	Color, Blink, Position
Bitmap	List	None	Color, Blink, Position
Touch Region	None	Border characteristics, color	None
Trend	None	Border characteristics	Color
Message	None	Height, Width, Direction	Color, Position
Pushbutton	None	Style, Color, Text Color	None
Line	None	Width	Color, Blink, Position, Rotation
Shape	None	None	Color, Blink, Position, Rotation, Fill
Meter	None	Character size for labels	None
Trend Record	None	Character size for labels	None
Frame	Raised or Recessed	Side width	Color, Blink, Position
Circle	Unfilled	Line width	Color, Blink, Position, Rotation
Circle	Filled	None	Color, Blink, Position, Rotation, Fill
Rectangle	Unfilled	Line width	Color, Blink, Position, Rotation
Rectangle	Filled	None	Color, Blink, Position, Rotation, Fill

You can make the attribute dependent on the tag associated with the object or on some other tag. For instance, a Tag object may display motor speed with its color controlled by an alarm on motor temperature.

Configuring Dynamic Color

The color attributes of an object can be made dependent on the condition of an analog or a digital tag. On color Datapanels, up to four colors can be assigned to an object on the screen. On monochrome Datapanels, only two colors, black and white are available. In both cases, if the active color of the object is the same as the screen background color, the object will not be visible.

Considerations for Dynamic Color

The relevant use of color depends on the type of graphic being configured and the tag being used as a color-controller:

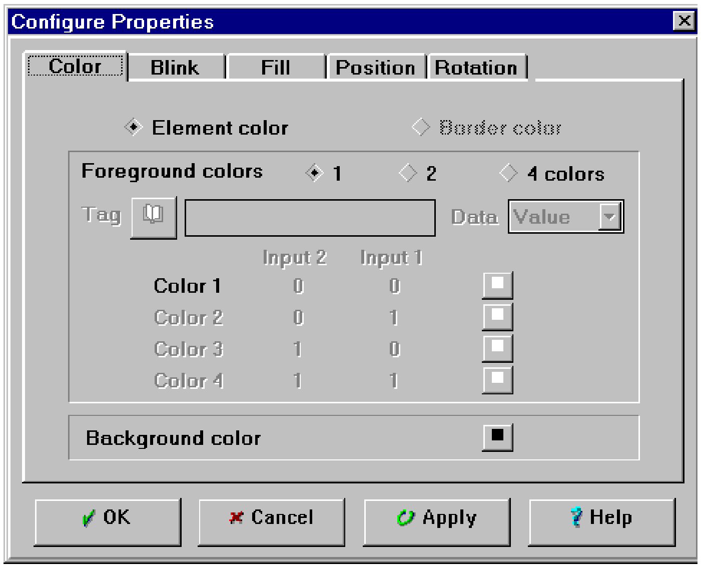
Type of Tag Selected	Data Type	Foreground Colors Available	Input 1 and Input 2
Analog	Value	4	NA
Analog	Ack	2	NA
Analog	Unack	2	NA
Analog	High	2	NA
Analog	Low	2	NA
Digital	Ack	2	None
Digital	Unack	2	None
Digital	Value	2	Input 1
Digital	Value	4	Input 1 & 2

When Analog Value is chosen, the Datapanel monitors the two least significant bits of the chosen analog tag. Depending on the value of these two bits (0, 1, 2, 3), the Datapanel displays the configured item with the respective color (Color 1, Color 2, Color 3, Color 4).

If any of the other analog data types or if digital data types Ack and Unack are chosen, the Datapanel displays the item in Color 1 if the data is False and display the item in Color 2 if the data is True.

When Digital Value is chosen, the value is dependent of the number and state of the digital inputs. The Datapanel displays the configured item with the applicable color (Color 1, Color 2, Color 3, Color 4) respective to the digital values 0, 1, 2,and 3.

Configure Properties Dialog Box



● Element color ◇ Border color

Foreground colors ● 1 ◇ 2 ◇ 4 colors

Data: Value

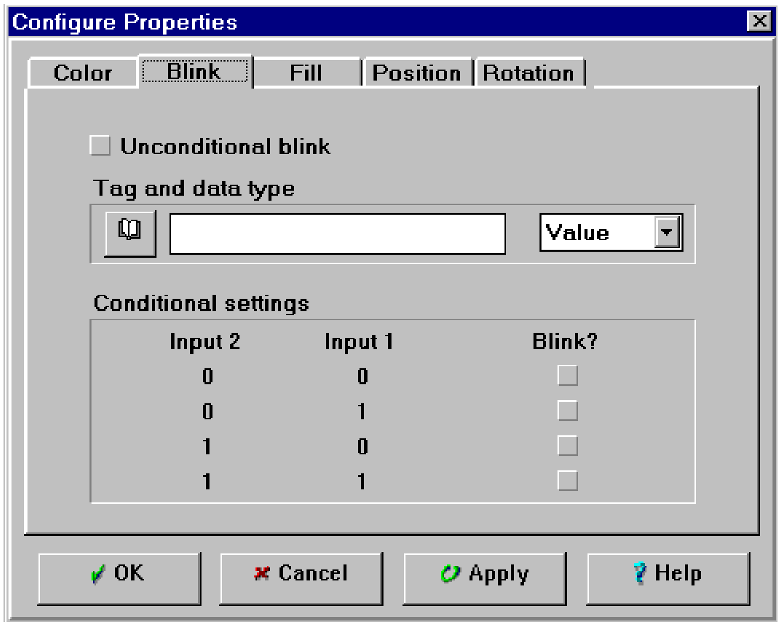
	Input 2	Input 1	
Color 1	0	0	☐
Color 2	0	1	☐
Color 3	1	0	☐
Color 4	1	1	☐

Background color ■

- The initial default setting is "1 Foreground Color". Select 2 or 4 colors to have the dialog box display the choice of tags.
- Specify the tag you want to control the color of the object being configured. Either type the tag name in the Tag field or click the browser button to access the Tag Browser dialog box and select from the list. You can select the tag being configured or a different tag.
- Choose the Data type you want to use to invoke the desired color.
- For some objects, the Color Element field provides for a choice of element or border. This allows you to assign different colors to the element (the main part of the graphic) and the border.
- The Color Mode field always provides the number of colors applicable to the tag chosen. Click the arrow on the Color Mode field to access the list of modes. Click on the desired mode. This will display Color 1 through Color 4, depending on the mode. Click on the color desired. Repeat for each of the relevant colors.
- Click on the desired color for the background.
- Click on OK to return to the previous dialog box.

Configuring Dynamic Blink

You can configure an object to blink or not blink, depending on the value of a tag. Unconditional blinking (the object blinks constantly) can also be selected for these objects.

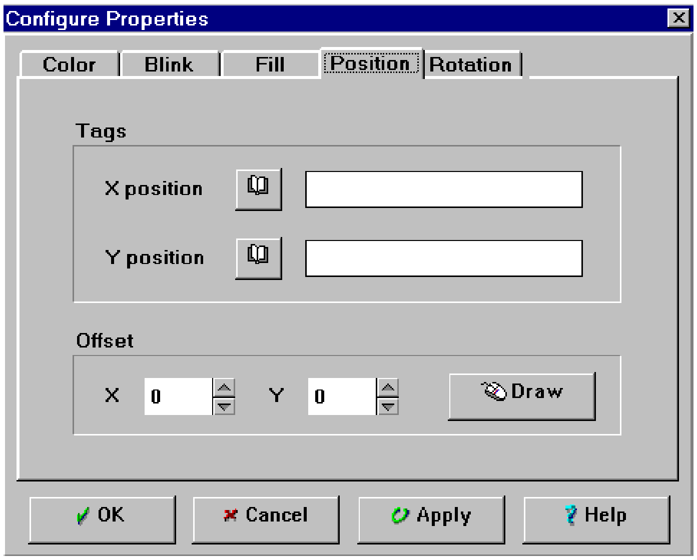

Configure Properties
Color
Blink
Fill
Position
Rotation
Tag and data type
Conditional settings
OK
Cancel
Apply
Help

☐ Unconditional blink

Value

Input 2	Input 1	Blink?
0	0	☐
0	1	☐
1	0	☐
1	1	☐

Configuring Dynamic Position


Configure Properties
Color
Blink
Fill
Position
Rotation
Tags
X position
Y position
Offset
Draw
OK
Cancel
Apply
Help

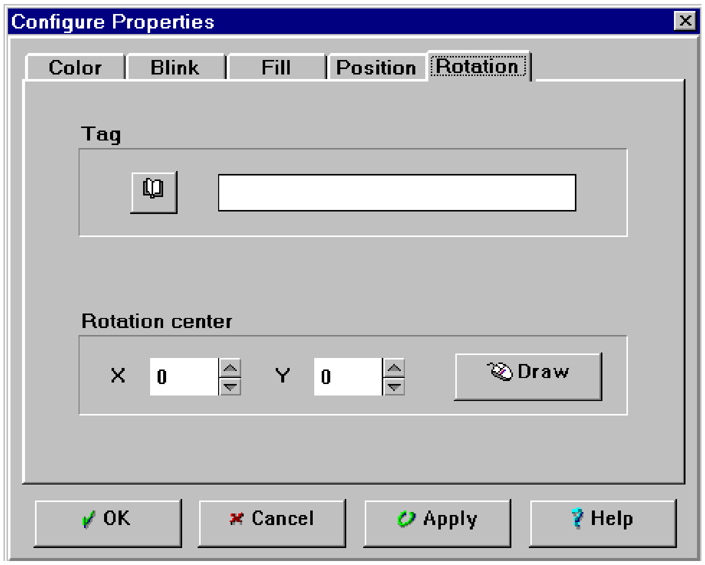
X 0
Y 0

You can configure the coordinates of an object to be dependent on the value of a tag. Coordinates are the position of the lower, left corner of the object. In the case of a circle, the lower left corner is defined by the square that bounds the circle. The offset is the upper right hand point to which the lower left hand corner will move. If the X-tag is an unsigned word with no scaling, when it is 0 it will be at base position. When the tag is 65535 it will be at the offset position. The scaling is based on a percentage of the internal limits.

Configuring Dynamic Rotation

Shapes, rectangles, and circles can be configured to travel on a circular path around a point (rotation center) in response to the value of a tag. The distance the object rotates around the point is proportional to the ratio of the tag's value to its full range.

The values for X and Y specify the coordinates of the point about which the object will travel. You can either enter values in the X and Y boxes, or click the Draw button to set the rotation center manually.

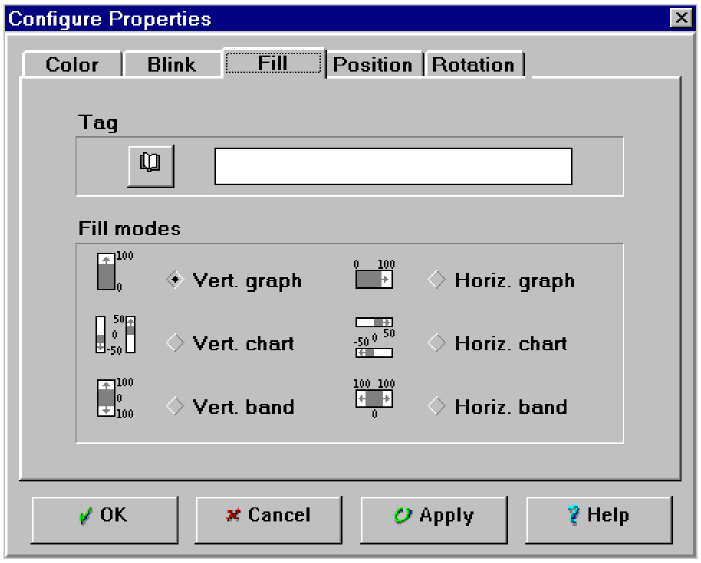

Configure Properties
Color
Blink
Fill
Position
Rotation
Tag
Rotation center
Draw
OK
Cancel
Apply
Help

X 0

Y 0

Configuring Dynamic Fill

Objects that can be filled (shapes, rectangles, and circles) can be configured so that the fill is animated. The proportion of the object that is filled depends on the value of the associated tag and is a percentage of the tag's internal limits range.

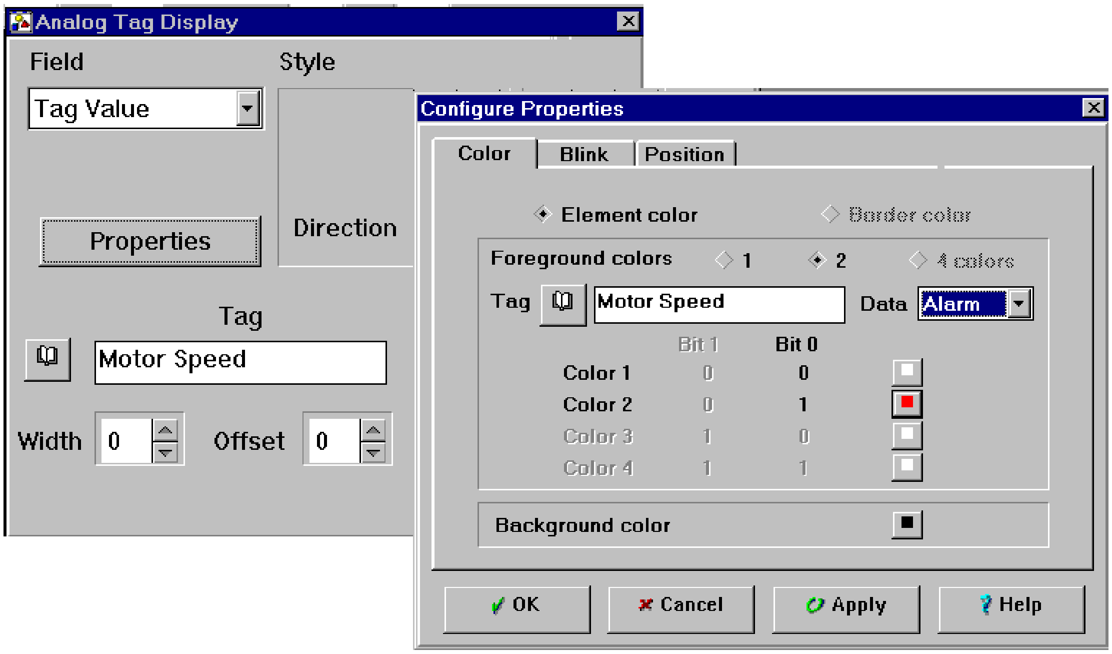

Configure Properties
Color
Blink
Fill
Position
Rotation
Tag
Fill modes
100
0
50
0
-50
100
0
100
0
100
-50
0
50
100
100
0
OK
Cancel
Apply
Help

● Vert. graph
○ Horiz. graph
○ Vert. chart
○ Horiz. chart
○ Vert. band
○ Horiz. band

Dynamic Display Examples

Object Color Controlled by Object Tag

An analog tag has been configured to display the numeric value of Motor Speed, the rpm of a particular motor. The color of the display is controlled by the alarm characteristics of the tag so that the display changes color if the Motor Speed tag value exceeds one of the alarm limits.


Analog Tag Display
Style
Properties
Direction
Configure Properties
Color
Blink
Position
✓ OK
✖ Cancel
Apply
? Help

Field: Tag Value

Tag: Motor Speed

Width: 0

Offset: 0

● Element color ○ Border color

Foreground colors ○ 1 ● 2 ○ 4 colors

Tag: Motor Speed

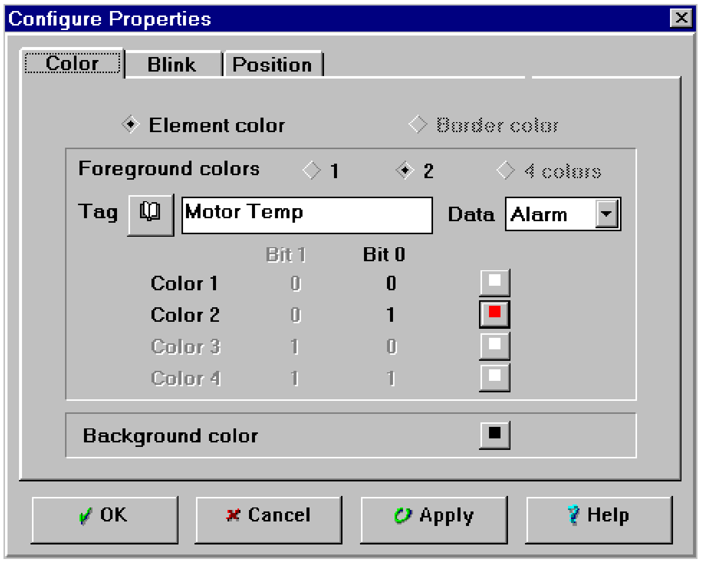
Data: Alarm

	Bit 1	Bit 0	
Color 1	0	0	☐
Color 2	0	1	🟥
Color 3	1	0	☐
Color 4	1	1	☐

Background color ■

Object Color Controlled by Tag Other than Object Tag

In this example, the color of the Motor Speed tag display is controlled by the alarm characteristics of a tag called Motor Temperature. The Motor Speed tag display changes color if the Motor Temperature tag value exceeds one of the alarm limits.


Configure Properties
Color
Blink
Position
✓ OK
✖ Cancel
Apply
? Help

● Element color ○ Border color

Foreground colors ○ 1 ● 2 ○ 4 colors

Tag: Motor Temp

Data: Alarm

	Bit 1	Bit 0	
Color 1	0	0	☐
Color 2	0	1	🟥
Color 3	1	0	☐
Color 4	1	1	☐

Background color ■

Cutting, Copying, and Pasting Graphic Pages

Pages can be cut, copied and pasted from one page to another within a database or from one database to another using the Graphic Browser as detailed in the procedures below. The standard shortcut keys for these functions, **Ctrl+X**, **Ctrl+C,** and **Ctrl+V,** can be used. You can also access these functions by clicking the appropriate buttons on the toolbar.

Using these functions, you can Cut/Copy/Paste in a variety of ways:

- A whole page to a blank page in the same database.
- A whole page to a blank page in some other database.
- A whole page to an occupied page (overwrite) in the same database.
- A whole page to an occupied page (overwrite) in another database.

General Information Regarding Cut/Copy/Paste

The Cut, Copy and Paste functions use the Windows clipboard. You can Cut/Copy from one database, change to a different database and Paste into it. You can Cut/Copy from one database, exit the WinCfg program, do whatever you need to do (as long as you don't Cut/Copy from another application into the clipboard), start WinCfg again, and Paste the page into the newly selected database.

When a database is opened, the Sizes listed by the Graphic Browser are the actual number of bytes used by the pages in a Datapanel database. When you paste, or add new elements to a page, the Byte Size column is updated, but only with an estimate of the size it will use.

Cutting a Page

To cut a page from a database to the Windows clipboard:

1. A page (any page) must be visible in WinCfg.
2. Click the Browse button on the Graphic page toolbar to display the Graphic Browser.
3. Click the number of the desired source page in the Graphic Browser window. The source page will be displayed in the Graphic page window.
4. Click the Cut button on the main WinCfg toolbar (the scissors). You will be prompted to be sure you want to Delete (cut) that page from the database.
5. If you click OK to the delete query, the selected page will disappear, the next lower page in the database will be displayed, and the contents of the Cut page will be placed in the Windows clipboard.
6. If you click No, nothing will be lost and nothing will be placed in the clipboard.

Copying a Page

To copy a page from a database to the windows clipboard:

1. A page (any page) must be visible in WinCfg.
2. Click the Browse button on the Graphic page toolbar to display the Graphic Browser.
3. Click the number of the desired source page in the Graphic Browser window. That page will be displayed by WinCfg.
4. Click the Copy button on the main WinCfg toolbar (the double page button next to the scissors).
5. There will be no apparent change in the display, but the contents of the page will be placed in the Windows clipboard.

Pasting a Page

To paste a page from the Windows clipboard to a database:

1. A page (any page) must be visible in WinCfg.
2. Click the Browse button on the Graphic page to display the Graphic Browser.
3. Click the number of the target page into which you want to paste the contents of the clipboard. If you want to paste into an empty page, you must click the Expand button to see all pages. (Empty pages have a Byte Size value equal to 0.) Click the desired page. The contents of that page will be displayed.
4. Click the Paste button on the WinCfg main toolbar (the small clipboard button).
5. If the target page was empty, it will now appear with the source page data that was in the clipboard. The Graphic Browser column "Byte Size" will be updated with an *estimate* of the number of bytes consumed by that page.
6. If the target page contained elements, the About to Destroy Graphic Page dialog box will appear. Click OK to replace the contents of the target page with the page on the clipboard.

Chapter 7

Displaying Information on the Page

Many kinds of information or data can be displayed on a Datapanel page, such as, text, analog tags, digital tags, bitmaps, touch regions, trend charts, and bar graphs. Each of these is discussed below.

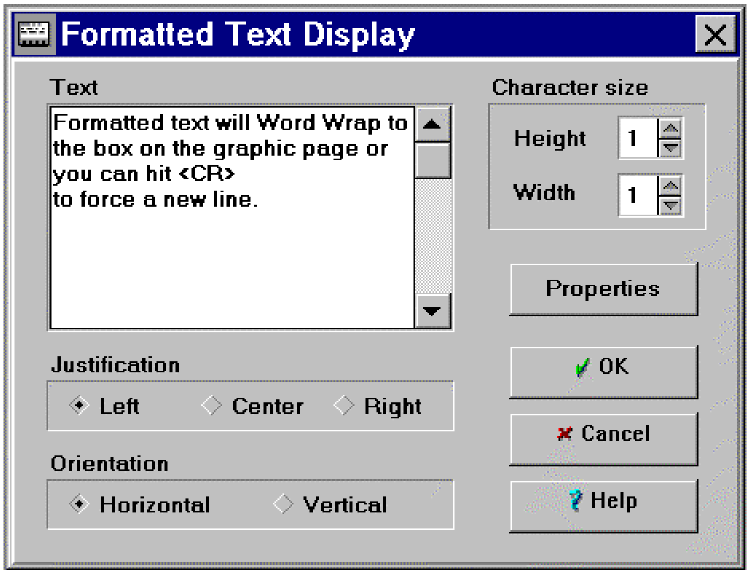
Text Objects

T Static text objects are individual text strings that appear on a particular page. You can use static text for titles, explanatory information, messages, labels, etc. (To create and store text strings that are controlled by tag values, use the Message feature.)

Click the Text button to initiate the text display operation. Move the mouse pointer to the location on the page where you want the text to appear. Click and hold the left mouse button, drag a rectangle of the desired size and location, release the button. The Formatted Text Display dialog box will appear. .

Formatted Text Display

- Enter the desired text into the Text field.
- Select the height, width, justification, and orientation of the text.
- To configure dynamic color, blink and position, click the Properties button. Configure as described in “Dynamic Display” in Chapter 6.
- Click OK to exit the dialog box.


Formatted Text Display

Text

Formatted text will Word Wrap to
the box on the graphic page or
you can hit <CR>
to force a new line.

Character size

Height 1

Width 1

Justification

● Left ○ Center ○ Right

Orientation

● Horizontal ○ Vertical

Message Tables

A message table allows you to assign text strings to values of a tag. A text string is displayed when the tag's value is less than or equal to the assigned value. Once you have created a message table, you can configure the message display.

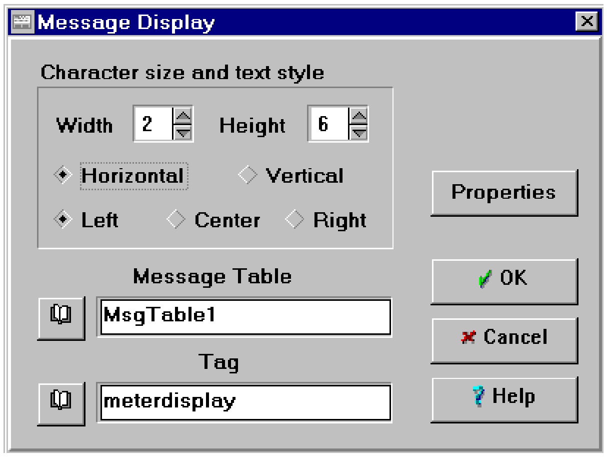
To display a message, click the Message button. Move the mouse pointer to the location on the page where you want the message to appear. Click and hold the left mouse button, drag a rectangle of the desired size and location, release the button. The Message Display dialog box will appear.

Example:

0	TEXT0	Displays for 0
10	TEXT10	Displays for 1-10
20	TEXT20	Displays for 11-20
65535	TEXT30	Displays for 21-65535

Message Display Dialog Box

- Select the height and width of the text display.
- Select horizontal or vertical orientation of the text display.
- To create a message table or select an existing one, click the browser button. The Message Table Browser dialog box will appear. (You can also create a message table by selecting Message Browser from the Configure menu.)



Message Display

Character size and text style

Width 2 Height 6

● Horizontal ○ Vertical

● Left ○ Center ○ Right

Message Table: MsgTable1

Tag: meterdisplay

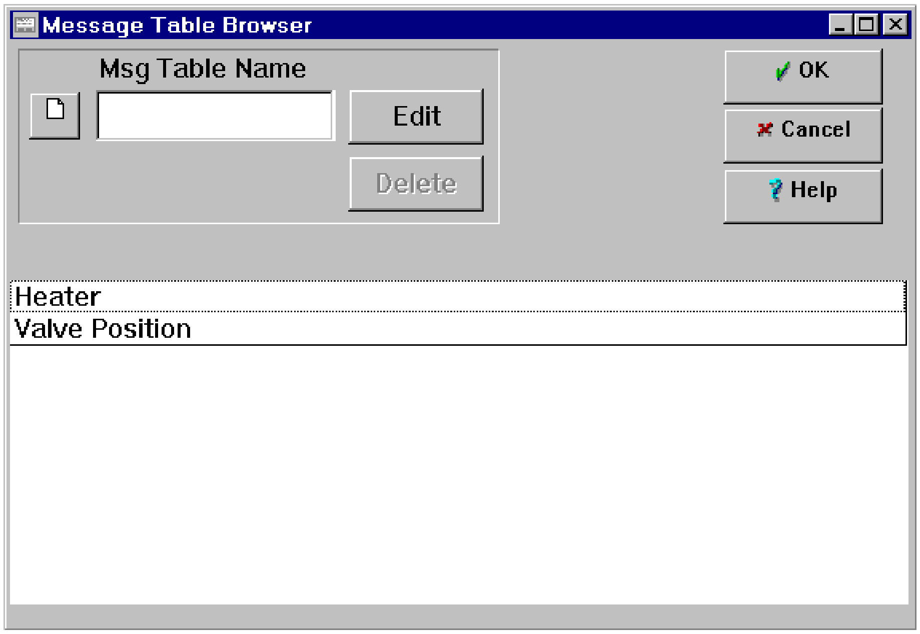
- To select a tag to be associated with the message table, click the Tag browser button. The Tag Browser dialog box will appear.

Note: The tag type and decimal places should match those of the table you selected.

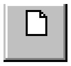
- To configure dynamic position, click the Properties button. Configure as described in "Dynamic Display" in Chapter 6.
- Click OK to exit the Message Display dialog box.

Message Table Browser

The Message Table Browser can be accessed from the Message Display dialog box or by selecting Message Browser from the Configure menu. It allows you to edit an existing message table or create a new one.



Heater
Valve Position

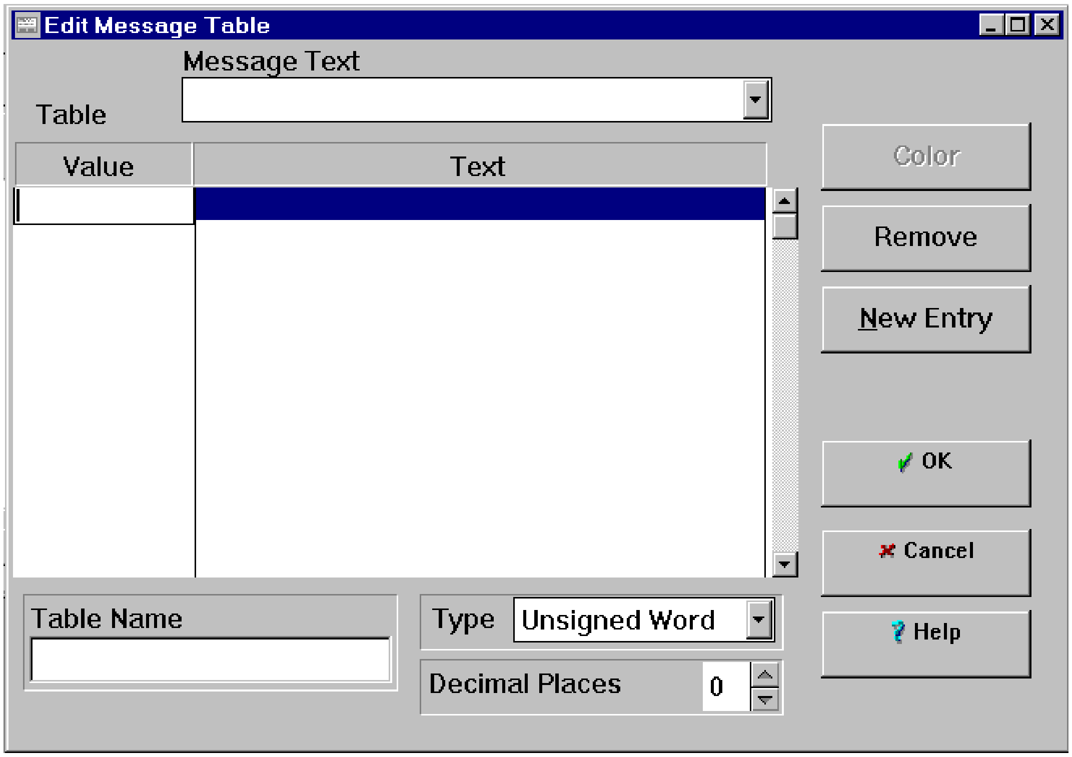


To create a new message table, click the button to the left of the Msg Table Name box. The Edit Message Table dialog box will appear.

To edit an existing message table, select the table name from the browser window. The table name will appear in the Msg Table Name box. Click the Edit button. The Edit Message Table dialog box will appear.

Edit Message Table

Use this dialog box to create a message table. The messages making up the message table must be associated with a tag value. (The tag that controls the display of the messages is specified in the Message Display dialog box.)


Edit Message Table
Message Text
Table
Value
Text
Color
Remove
New Entry
OK
Cancel
Help
Table Name
Type
Unsigned Word
Decimal Places
0

To create a message table

- Type a name for the table in the Table Name box. The table name can consist of up to 24 characters, including spaces.
- Select a data type from the Type list and number of decimal places for the tag values. The data type must be compatible with the type of tag selected in the Message Display dialog box.
- In the Table, type a tag value in the Value column, press Tab, and type the corresponding message text, or select an existing message from the drop-down list in the Text box.
- To create a new message, click the New Entry button. The messages will appear in the table in tag value order.
- When you have finished building the message table, click OK.

Adding an Analog Tag to the Page

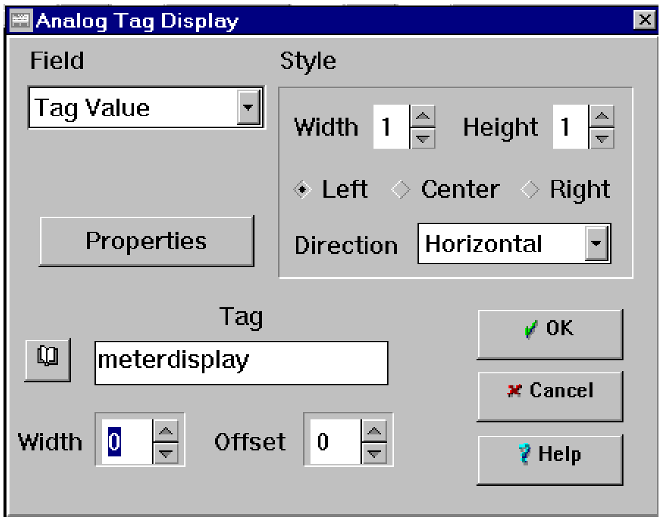
Analog tag displays are similar to text except they present the scaled or unscaled value (depending on how it was configured) of the analog parameter associated with the analog tag.

Click the Analog Tag button to initiate the analog tag display operation. Move the mouse pointer to the location on the page where you want the text to appear. Click and hold the left mouse button, drag a rectangle of the desired size and location, release the button. The Analog Tag Display dialog box will appear.

If the boundary rectangle around your new object appears disproportionately large that is because the new Formatted Text feature uses the box ‘handles’ to shape a field for textual displays to ‘word wrap’. Simply drag a corner handle to the smallest size it will allow. Text resulting from an analog text tag is handled as a numerical object by Wincfg and will not wrap as a text object will.

Analog Tag Display Dialog Box

- In the Field box, specify the aspect of the tag you want to display.
- To specify the Tag, click the browser button. The Tag Browser dialog box will appear.
- Select the height, width, justification, and direction of the tag display.
- To configure dynamic color, blink, and position, click the Properties button. Configure as described in “Dynamic Display” in Chapter 6.
- Set the Width and Offset to specify how the tag is to be displayed. (See “Width and Offset” in Chapter 6.)
- Click OK to exit the Analog Tag Display dialog box.



Analog Tag Display

Field: Tag Value

Style: Width 1 Height 1

◆ Left ◇ Center ◇ Right

Direction: Horizontal

Tag: meterdisplay

Width 0 Offset 0

Adding a Digital Tag to the Page

Digital tag displays present the value of the digital parameter associated with the digital tag.

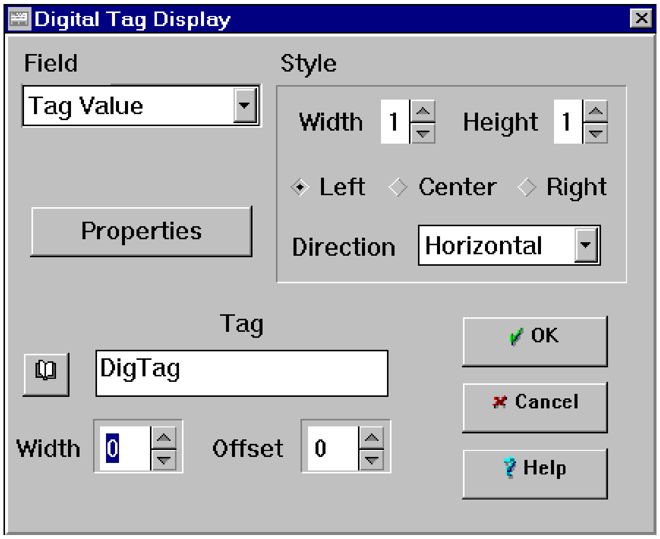
Click the Digital Tag button to initiate the digital tag display operation. Move the mouse pointer to the location on the page where you want the text to appear. Click and hold the left mouse button, drag a rectangle of the desired size and location, release the button. The Digital Tag Display dialog box will appear.

If the boundary rectangle around your new object appears disproportionately large that is because the new Formatted Text feature uses the box ‘handles’ to shape a field for textual displays to ‘word wrap’. Simply drag a corner handle to the smallest size it will allow. Text resulting from a digital text tag is handled as a numerical object by Wincfg and will not wrap as a text object will.

Note that the size of the box you draw on the screen will determine word wrapping of the status text.

Digital Tag Display Dialog Box

- In the Field box, specify the aspect of the tag you want to display. Status will display the status texts. Value will display values of 0—3.
- To specify the Tag, click the browser button. The Tag Browser dialog box will appear.
- Select the height, width, justification, and direction of the tag display.
- To configure dynamic color, blink, and position, click the Properties button. Configure as described in Dynamic Display section in Chapter 6.
- Set the Width and Offset to specify how the tag is to be displayed. (See Width and Offset in Chapter 6.) Status text can be wrapped to multiple lines by changing the size of the text box on the graphics page. Hard returns in the status text strings are not supported.
- Click OK to exit the Digital Tag Display dialog box.



Field: Tag Value

Style: Width 1 Height 1

● Left ◇ Center ◇ Right

Direction: Horizontal

Tag: DigTag

Width: 0 Offset: 0

Adding a Bitmap to the Page

Bitmaps can be displayed on all Datapanels except Models K and 150. Bitmaps can be used in four ways:

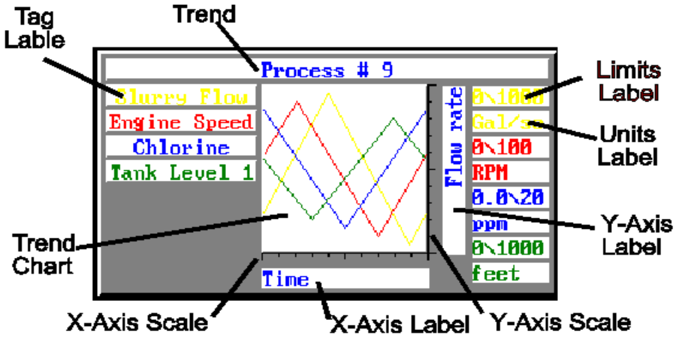
- Static - to form a general background on a Datapanel display.
- Discrete - to indicate the state of a Digital Tag.
- Limit - to indicate that a limit for an Analog Tag has been violated.
- List - a series of bitmaps can be configured to represent values in an analog range. For example, pictorial representations of a dial in various pointer positions to represent pressure readings.

Bitmaps are stored in one of two directories created during installation: BITMAPS (2-color bitmaps for use with monochrome displays) and BMPCOLOR (16-color bitmaps for use with color displays or 16-gray monochrome displays). A maximum of 300 bitmaps can be displayed depending on the amount of available memory. Bitmaps will be rejected if:

- A bitmap for monochrome contains a palette of more than 2 colors, even if only two or less are used.
- A bitmap for color contains a palette of more than 16 colors, even if only 16 or less are used.

Click the Bitmap button to initiate the bitmap display operation. Move the mouse pointer to the location on the page where you want the lower left corner of the bitmap to appear. Click. The Configure Bitmaps dialog box will appear.. The exact procedure to add the bitmap depends on the style of bitmap display selected. See Chapter 11 for detailed information on using and configuring bitmaps.

Adding a Trend Record to the Page


Tag Lable
Trend
Process # 9
Slurry Flow
Engine Speed
Chlorine
Tank Level 1
Flow rate
0\1000
Gal/s
0\100
RPM
0.0\20
ppm
0\1000
feet
Time
Limits Label
Units Label
Y-Axis Label
Trend Chart
X-Axis Scale
X-Axis Label
Y-Axis Scale

A Trend Record is a wizard-produced trend chart. The Trend Record Wizard allows you to quickly and easily format a trend chart. The wizard supports extensive scale and labeling capabilities.

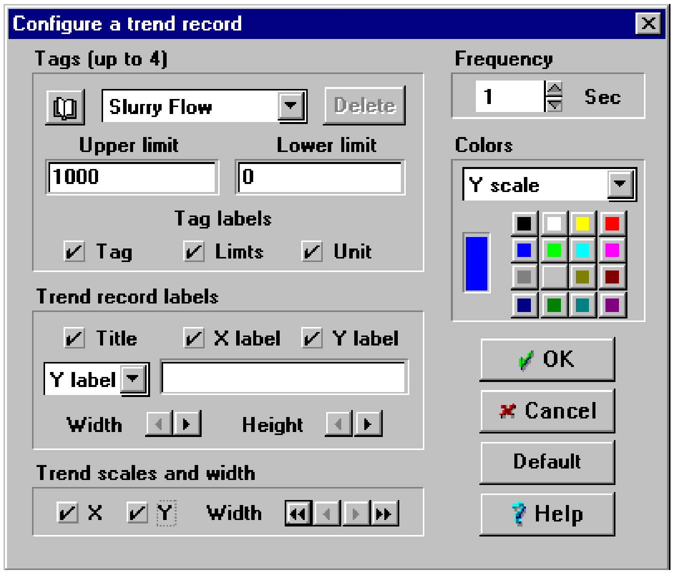
A maximum of 25 trends (100 trends in the 320 and 1000 Series Datapanels) can be configured. These can either be displayed in Trend Records or the older Trend Charts. The maximum number of trend-related tags permitted per page is four. These tags can be in either Trend Records or Trend Charts. The number of Trend Records/Charts permitted on a page can be any arrangement with a total of four tags. Some possible arrangements are shown in the following table.

Number of Trend Records	Number of Tags/Record	Number of Trend Charts
1	4	0
2	2	0
4	1	0
0	0	4
1	2	2

To initiate Trend Record design, click the Trend Record button. Move the mouse pointer to the location on the page where you want the text to appear. Click and hold the left mouse button, drag a rectangle of the desired size and location, release the button. The Configure a Trend Record box will appear.

Configure a Trend Record Dialog Box

A maximum of 25 trends (100 trends in the 320 and 1000 Series Datapanels) can be configured. Use this dialog box to select the tag information that a Trend Record will display and to configure the Trend Record's appearance.


Configure a trend record

Tags (up to 4): Slurry Flow

Upper limit: 1000

Lower limit: 0

Tag labels: ☑ Tag ☑ Limts ☑ Unit

Trend record labels: ☑ Title ☑ X label ☑ Y label

Y label:

Frequency: 1 Sec

Colors: Y scale

Trend scales and width: ☑ X ☑ Y

Delete
Width
Height
Width
OK
Cancel
Default
Help

Tags

You can display up to four tags on each Trend Record on color models (1 tag on each Trend Record on monochrome models).

To Add a tag , click the Browser button to access the Tag Browser dialog box. Select the desired tag.

You can delete a tag only when more than one tag has been added to the tag drop-down list. To delete a tag, select one of the tags and click the Delete button. (Since only one tag is permitted on the monochrome models, the Delete key is always grayed-out on those models. Selecting another tag replaces the current tag.)

To Configure a Tag:

- Select the tag to be configured.
- Enter values for the upper and lower limits in the appropriate fields.
- Check the tag labels you want: Tag, Limits, and Unit.
- Repeat for each desired tag.

Trend Record Labels

Use this section to format the chart parameters.

- Check the trend record labels you want: Title, X Label , and Y Label.
- From the drop-down list, select one of the labels.
- Enter the appropriate text for that label in the text field.
- Adjust the width and height of the label using the Width and Height arrows.
- Repeat for each label.

Trend Scales and Width

Use this section to select the scales you want to appear on the chart and to adjust the width of the chart.

- Check the scales you want: X, and Y.
- Adjust the width of the chart box using the Width arrows.

Frequency

Use this section to select the frequency (time interval) in seconds at which the chart will be updated. This time should be slower or equal to the refresh rate of the tag. The frequency will determine how often a sample of the value will be taken and plotted on the trend. The number of samples taken is fixed at 120 samples for all models supporting trends except for the 320T, 1060, 1062 and 1065 where 240 samples are taken. This means that if a frequency of 1 second is selected for a trend on a 320T display, 240 samples will be taken 1 second apart from one another and the total time elapsed from one end of the chart to the other would be four minutes. After that, old data is lost and new data is added to the end of the trend line.

Colors

This section is displayed only for models that support color and is used to format the Trend Record colors. Depending on what parameters have been configured, there are up to 14 items that can be configured in colors:

Trend Record Structure Items

- Main Frame **-** the background color of the entire Trend Record
- Trend Frame **-** the background color of the trend chart itself.
- Title Frame **-** the background color of the Trend Record Title frame.
- Title Text **-** the color of the text that appears in the Title Frame.
- X Label Frame **-** the background color of the X Label frame for the x axis.
- X Label Text **-** the text color of the label for the x axis.
- Y Label Frame **-** the background color of the Y Label frame for the X axis.
- Y Label Text **-** the text color of the label for the Y axis.
- X Scale **-** the color of the X axis tick marks
- Y Scale **-** the color of the Y axis tick marks

Tag-Related Items (related to the particular tag that is showing in the tag data field)

- Point **-** plotted points and tag-related text. (All plotted points and text in the Trend Frame, Tag Frame, Limits Frame, and Unit Frame are set by this selection.)
- Tag Frame **-** the background color of the Tag name frame.
- Limits Frame **-** the background color of the Limits frame.
- Unit Frame **-** the background color of the Unit frame.

For structure items, select the item from the Colors drop-down list and click on the desired color. For tag-related items, select the desired tag from the drop-down list, select the item from the Colors drop-down list, and click on the desired color.

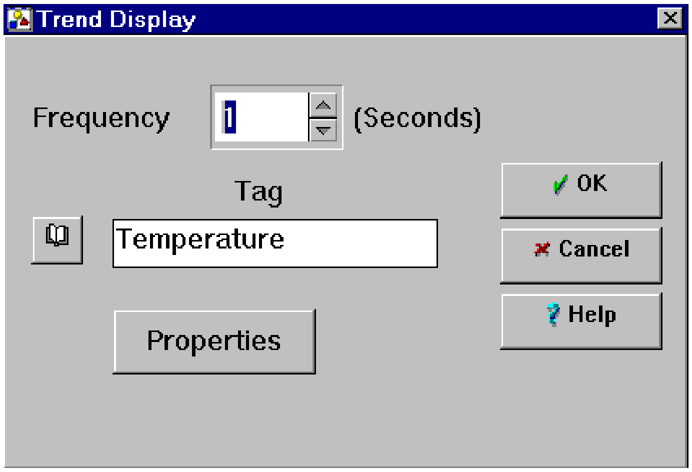
Default

Many of the configuration choices can be saved and automatically applied to other Trend Records as they are created. To save the present Trend Record configuration as the default configuration for future Trend Records, click the Default button.

Adding a Trend Display to the Page

When the Trend Record does not meet your needs, you can custom configure a trend chart. Trend charts allow you to display the time variation of a tag. Up to four charts may be configured on each page, with a maximum of 25 trends (100 trends in the 320 and 1000 Series Datapanels) per database. This option is not available on the Model K or 150 Datapanels .

Click the Trend Display button. Move the mouse pointer to the location on the page where you want the display to appear. Click and hold the left mouse button, drag a rectangle of the desired size and location, release the button. The Trend Display dialog box will appear.



Frequency 1 (Seconds)

Tag Temperature

Trend Display Dialog Box

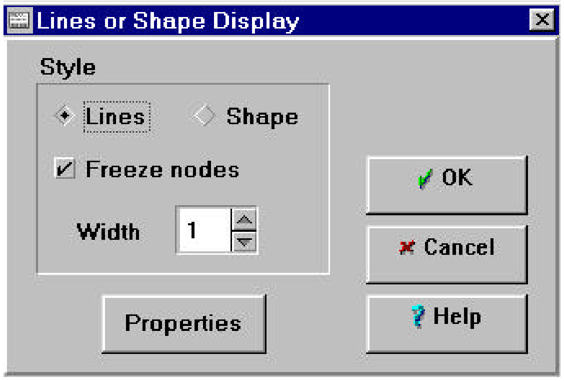
- Click the up-down arrows on the Frequency field to select the update interval in seconds. This time should be slower or equal to the refresh rate of the tag. Note: 120 samples are taken for the Trend line at the frequency specified (For the 320T, 1060, 1062 and 1065 Datapanels, the number of samples taken is 240). For example, if a frequency of 1 second is specified, 120 samples, each taken 1 second apart, will result in an overall trend period of 2 minutes.
- To specify the tag, click the browse button. The Tag Browser will appear.
- To configure dynamic color, click the Properties button. Configure as described in Dynamic Display section in Chapter 6.
- Click the Dynamic/Color button if you want the display to be dynamic. Configure as described in “Dynamic Display” in Chapter 6.
- Click OK to return to the page design screen.

Adding Lines and Shapes to the Page

Lines can be placed on the page either as simple straight lines suitable for formatting tables and charts or they can be made of multiple segments of different length and orientation. The width of the line can be adjusted.

To add a line or shape, click the Lines or Shape button. Move the mouse pointer to the location on the page where you want the line to begin, click and hold the left mouse button, drag the end of the line to the desired location, and release the button. Without moving the mouse, click and drag to draw another segment of the line.

An alternate method is to place the first segment, then just click at the next location. The line segment will be drawn to the next location without the user having to click and hold.


Lines or Shape Display

Style

● Lines ○ Shape

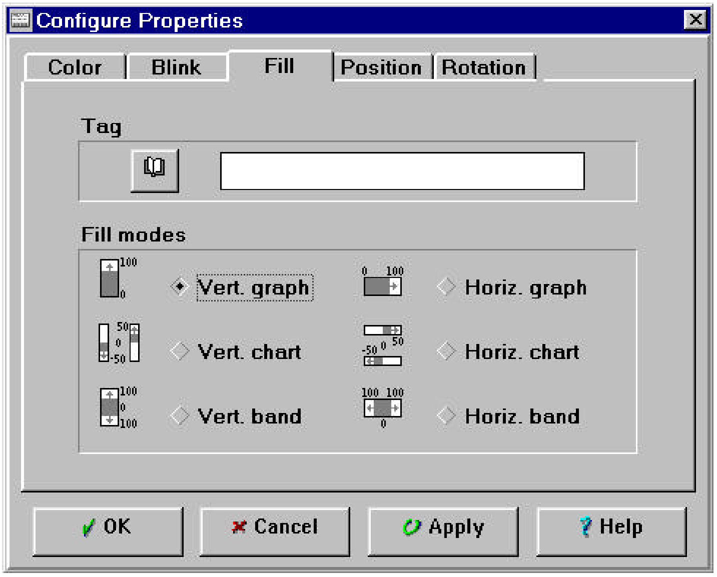
☑ Freeze nodes

Width 1

Line size can be modified from the dialog box. When all segments have been drawn, double click. The Lines or Shape Display dialog box will appear.

Lines or Shape Display Dialog Box

- To convert the line to a shape, click the Shape box.
- Click Freeze nodes to lock the line nodes in relation to each other. Freeze Nodes is used to prevent the user from accidentally changing the line node relationships when moving the whole line.
- Click the up-down arrows to adjust the width of the line. This box is not active if Shape is selected.
- To configure dynamic properties for the line or shape, click the Properties button. For line objects, you can configure color, blink, position and rotation. For shapes, you can also configure dynamic Fill. If there is no dynamic fill, the shape is just a solid, filled-in polygon
- Click OK to return to the Graphic window.


Configure Properties

Fill

Tag

Fill modes

● Vert. graph ○ Horiz. graph

○ Vert. chart ○ Horiz. chart

○ Vert. band ○ Horiz. band

Editing Lines on the Page

You can change existing lines by adding a node, deleting a node, or by moving a node. The Freeze Nodes box in the Lines or Shape Display Dialog Box is checked, you will not be able to edit the line.

Inserting a Node

Move the mouse pointer to the desired place on the line. When the pointer changes to a four-headed arrow, click the left mouse button to place a new node on the line. The new node can be then be dragged to a new location to change the shape of the line.

Deleting a Node

Move the mouse pointer to the desired node on the line. When the pointer changes to a four-headed arrow, click the left mouse button to select the node. Press the Delete key to remove the node. The line will assume a new configuration without the deleted node.

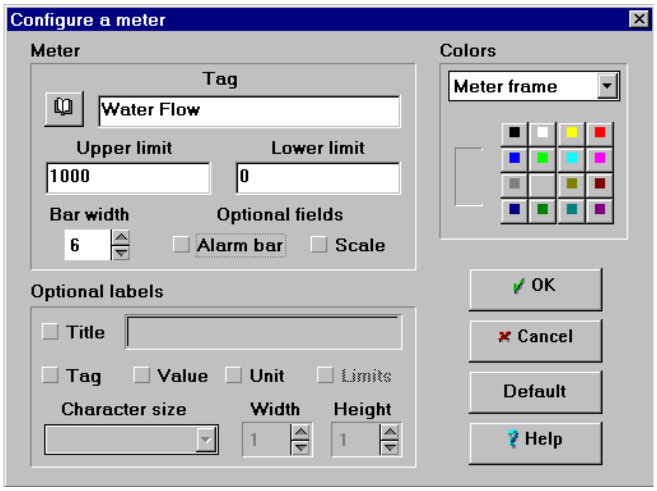
Moving a Node

Move the mouse pointer to the desired node on the line. When the pointer changes to a four-headed arrow, press the left mouse button to select the node. Drag the node to the desired location and release.

Adding a Meter to the Page

The meter consists of a bar chart that can be sized. A method is provided to simply and quickly add a title, units specification, tag-based numeric values, alarm bars, and scales. For color panels, these features may be specified to appear in a selected color.

To add a meter, click the Meter button. Move the mouse pointer to the location on the page where you want the lower left corner of the meter to begin. Press the left mouse button and drag the mouse to the desired size and shape desired for the meter. Release the mouse button. The Configure a Meter dialog box will appear.


Configure a meter

Meter

Tag: Water Flow

Upper limit: 1000

Lower limit: 0

Bar width: 6

Optional fields: ☐ Alarm bar ☐ Scale

Optional labels

☐ Title

☐ Tag ☐ Value ☐ Unit ☐ Limits

Character size

Width: 1

Height: 1

Colors: Meter frame

Configure a Meter Dialog Box

- To select the tag, click the Browse button. The Tag Browser dialog box will appear.
- Enter Upper Limit and Lower Limit scale values.
- Use the Bar Width field to set the width of the meter.
- Click Alarm Bar if you want an alarm bar to appear on the meter.
- Click Scale if you want a scale to appear on the meter.
- Select the appropriate value from the drop-down list for colors and configure the appropriate color.
- Click Title if you want a title to appear on the meter. Type the title in the text box.
- Click Tag if you want the tag name to appear on the meter.
- Click Value if you want the tag value to appear on the meter.
- Click Unit if you want the tag units to appear on the meter.
- To configure label character size:
  - ■ Select the label item from the drop-down list for character size
  - ■ Use the up-down arrows to configure the Width and Height.
- Click the Default button if you want to save the configuration settings and apply them automatically to future meters.
- Click OK to return to the page design screen.
- Drag the sizing handles to configure the meter size.

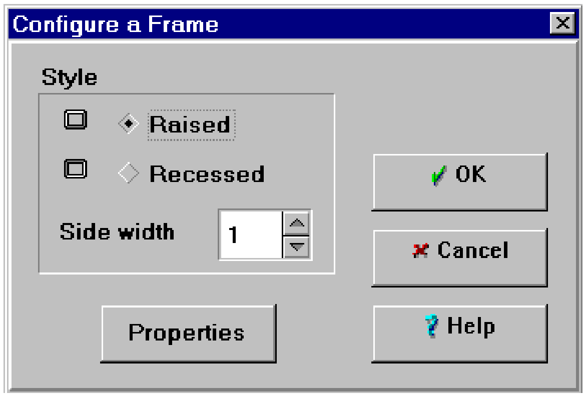
Adding Geometric Objects to the Page

You can add frames, circles and rectangles to a page. To add one of these objects, click the appropriate button on the toolbar. Place the object where you want it to appear on the page. The Configure dialog box for the geometric object will appear.

You can configure the following dynamic properties for these objects: For more information about configuring dynamic properties, see “Dynamic Display” in Chapter 6.

Object	Style	Properties
Frame	Raised	Color, Blink, Position
	Recessed	Color, Blink, Position
Circle	Unfilled	Color, Blink, Position, Rotation
	Filled	Color, Blink, Fill, Position, Rotation
Rectangle	Unfilled	Color, Blink, Position, Rotation
	Filled	Color, Blink, Fill, Position, Rotation

Configure a Frame Dialog Box



Configure a Frame

Style

◆ Raised

◇ Recessed

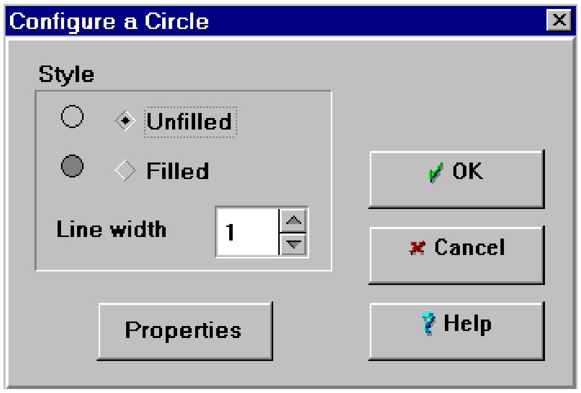
Side width: 1

Style

A frame can be either Raised or Recessed. For either style, you can configure Side width, which determines the width of the shaded edge. Type a value in the Side width field or use the arrows to select a width.

To configure dynamic color, blink, and position, click the Properties button.

Configure a Circle or Rectangle Dialog Boxes



Configure a Circle

Style

◆ Unfilled

◇ Filled

Line width: 1

The configuration of circles and rectangles is similar. Circles and rectangles can be either Unfilled or Filled. If Unfilled is selected, you can configure Line width.

To configure dynamic properties, click the Properties button.

Grouping Graphics

A graphic group is a collection of objects that are treated as a single unit. Objects can be grouped in order to maintain spatial relationship and display order on the page, or to cause a series of objects to refresh as a unit whenever any one object changes. The objects can be edited individually when they are ungrouped. Each object continues to support its full range of dynamic attributes after grouping. The stacking order of the objects before grouping can be adjusted using the Z-order feature accessed by clicking the right mouse button. This stacking order will be maintained after grouping, assuring that the objects are always drawn in the same order.

To create a group:

- Select the desired graphics objects by holding the Shift key and clicking each graphic you want to include in the group, or draw a box around the object you want to group.
- Click the right mouse button.
- Select Group from the drop-down menu.

To ungroup:

- Select the group
- Click the right mouse button.
- Select Ungroup from the drop-down menu.

Using Templates

Templates are graphics that can be used as backgrounds for other pages. Using templates simplifies the design operation when the same information or layout is repeated on a number of pages. Any graphic or collection of graphics can be used as a template. Once the template has been added to a page, the template cannot be selected or edited from that page. It can be edited on its own page.

- Templates cannot be nested. That is, a page configured with a template cannot be used as a template and still retain the graphics of the original template. Rather, the non-template contents of the page will be added to the new page as a background.
- Any number of pages can be configured with graphics for use as source templates on any number of target pages. However, only one source template can be assigned to any given target page.
- In the Datapanel, the template and the page graphics are combined into a single dynamic graphic.

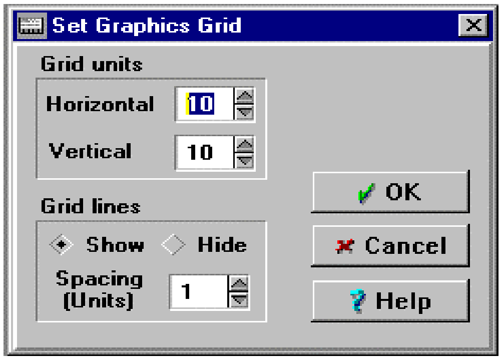
To create a template, choose Template from the Edit menu or the right click pop-up menu.

Graphics Grid

The grid feature of WinCfg helps you place objects on the graphic page in an orderly arrangement.

The grid can be turned on or off from the Edit menu or the right-mouse pop-up menu. The grid must be turned on before you can display it. (Select Show Graphics Grid Lines or Hide Graphics Grid Lines from the Edit menu or the pop-up menu.)

To configure the graphics grid, select Set Graphics Grid from the Edit menu or the right-click pop-up menu. The Set Graphics Grid dialog box will appear.


Set Graphics Grid

Grid units

Horizontal 10

Vertical 10

Grid lines

● Show ○ Hide

Spacing (Units) 1

Set Graphics Grid Dialog Box

Grid Units

Grid units refers to the number of pixels defined as a grid increment. For instance, a Grid Unit setting of 5 means that there is a grid location at every fifth pixel. Thus, Grid Units is a measure of the "coarseness" of the grid. A Grid Unit setting of 10 would result in a coarser grid than a setting of 3. A Grid Unit setting of 1 means that you can place an object at any pixel. This is equivalent to not having the grid turned on. The horizontal and vertical Grid Units can be set independently. The optimum setting of the Grid Units depends on the nature of the page layout and your personal preferences.

Grid Lines

In addition to setting the grid coarseness, you can control how many grid locations appear as lines on the screen. A Grid Lines Spacing of 1 means that every grid location will appear as a line on the screen. A Grid Lines Spacing of 3 means that every third grid location will appear as a line on the screen. This setting allows you to control the visual clutter on the page independently from the actual grid coarseness.

The Show/Hide option allows you to turn off the visual display of the grid. The Show/Hide function can also be accomplished by clicking the Graphics Grid On/Off option on the right-click pop-up menu.

If the Grid Units is set to one and the Grid Lines Spacing is set to one, it will appear that there is no grid on the page because this setting results in a grid line being drawn at every pixel.

Chapter 8

Configuring Operator Input

The Datapanel allows the operator to interface easily with both the controller and the Datapanel. There are four ways to do this:

Embedded Function Keys

Any function key (F-key) on any page can be programmed to provide a custom operator input function. In addition to programming F-keys for useful functions, you can program an F-key to prevent an operator from accessing the normal F-key function for any given page.

Touch Regions

The display areas of some models of Datapanels provide touch-screen operation. Some of these models are overlaid with a resistive touch membrane. Other models have an infra-red touch sensing system. These systems have the effect of dividing the membrane into rows and columns which can be used to partition the display area into touch regions. These regions function much like F-keys overlaid onto the display area. The incremental regions can be combined to create larger touch regions. Some Datapanels, such as the Model 240T, have a matrix of 8 rows of 6 columns which can provide up to 48 touch regions. Other Datapanels, such as the Model 320T have an analog membrane with a resolution of 1024 x 1024 points. This extremely fine resolution means that you have almost unlimited choice in the placement and size of rectangular touch regions.

Push Buttons

The display areas of the touch models can be configured with push button functions. The push button icon can be configured to emulate the various operation capabilities of mechanical push buttons.

Drive Out (Operator Write)

Selected tags can be designated as Drive Out points. This allows the operator to transmit new values for those points to the controller in the Run Mode. When the Drive Out function key is pressed by the operator, a list of drive-out points is presented. The operator selects which point to drive out. The operator will be requested to input the desired value. This value is then transmitted to the selected tag.

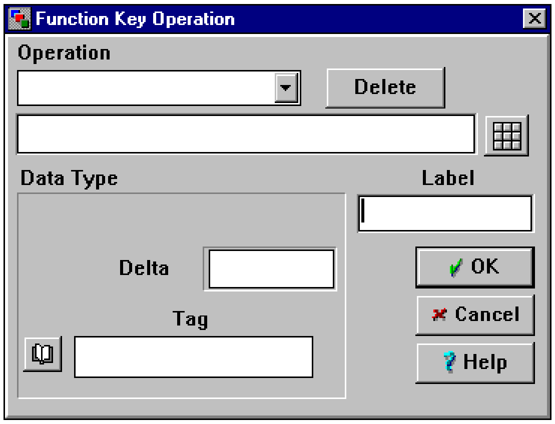
Output Operations

When you configure an embedded function key, pushbutton, or a touch region, you can select from the following types of output operations:

- Macro - causes a custom-configured operation to be performed
- Ramp - causes an analog tag value to change incrementally (not available for pushbuttons)
- Jog - causes a digital tag value to assume a new state as long as the key is pressed and then return to the opposite value when the key is released.
- Toggle - causes a digital tag value to toggle between two values
- Direct Write - writes a specified value to an analog or digital tag
- Recipe Load/Transfer -loads preconfigured values into the associated tag, and/or transfers the current values of the recipe tags to the controller (either or both operations can be selected)

Configuring Embedded Function Keys

On the page design screen, double click the F-key you want to reprogram. The Function Key Operation dialog box will appear. The appearance of the lower left corner of the box will vary according to the operation selected. The illustration shows the appearance of the box for the Ramp operation.



- Specify the tag.
- Enter the function key label in the Label field. (5 characters max, except 9 on Model H)
- Click the arrow in the Operation field to access a drop-down list:

  Macro
  Ramp
  Jog
  Toggle
  Direct Write
  Recipe Load/Transfer

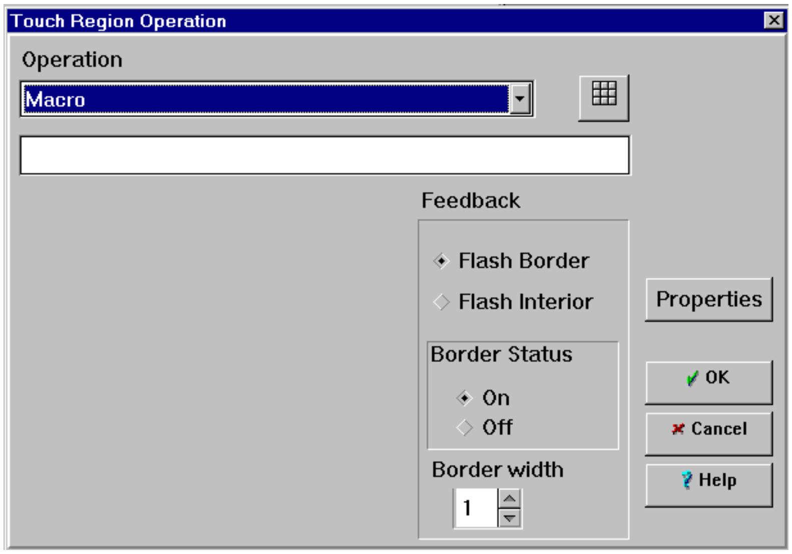
- Select one of the options on the list and follow the instructions for that operation given below.
- Click OK to return to the page design screen.

Adding a Touch Region to the Page

Click the Touch Region button to initiate the touch region design operation. Move the mouse pointer to the location on the page where you want the text to appear. Add the touch region by performing one of these operations:

- Click the left mouse button. A rectangle of the default size will be added to the page. The region can be moved and sized after configuration.
- Click and hold the left mouse button, drag a rectangle of the desired size and location, release the button. The region can be moved and sized after configuration.

The Touch Region Operation dialog box will appear.



Touch Region Operation

Operation: Macro

Feedback
◆ Flash Border
◇ Flash Interior

Border Status
◆ On
◇ Off

Border width: 1

Note: The touch region can be identified by overlaying either a text tag or a bitmap. The touch region and the identifying text tag or bitmap are independent.

See Chapter 11 for advanced information on using bitmaps.

Touch Region Operation Dialog Box

The appearance of this dialog box will change when you select an operation type.

- Select an option from the Operation list (Macro, Ramp, Jog, Toggle, or Direct Write). Follow the instructions for that operation given in subsequent sections.
- Click the appropriate selections in the Feedback option box.

  Flash Border/Flash Interior

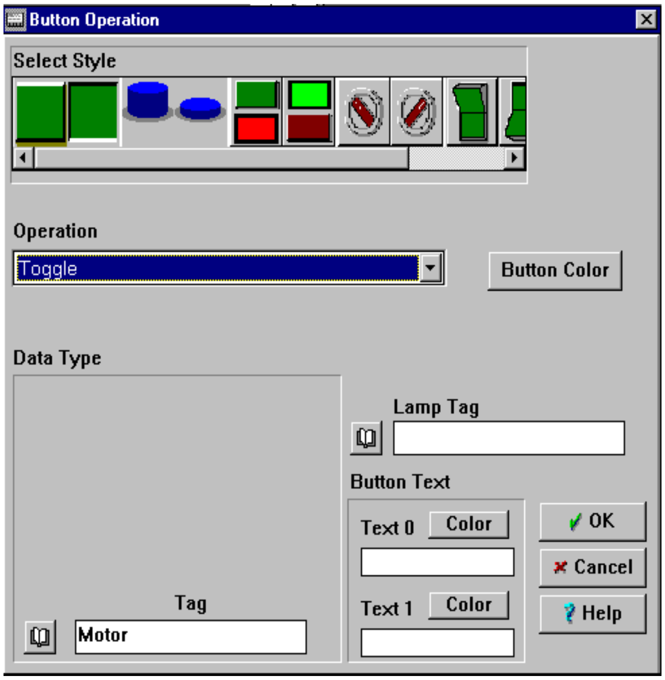
  Border Status On/Off. When the border status is On, the border will be displayed at all times. When the border status is Off, the border of the touch region will not be displayed on the Datapanel screen except while the operator is actually pressing the touch region.
- Set the border width. A value of 0 causes no border to show, even if border status is On.
- To configure dynamic color, click the Properties button. Configure as described in “Dynamic Display” in Chapter 6.
- Click OK to return to the page design screen.

Adding a Push Button to the Page

Push buttons provide added ease and versatility for output operations. Push buttons can be considered touch regions with images representing the four states of the button.

The four states are unpushed-unlit, pushed-unlit, unpushed-lit, pushed-lit. Therefore the first two are shown when the lamp tag is unused or 0. The second two are used when the lamp tag is 1.

Click the Push Button button to initiate the push button design. Move the mouse pointer to the location on the page where you want the button to appear. Click and hold the left mouse button, drag a rectangle of the desired size and location, release the button. (The region can be moved and sized after configuration.) The Button Operation dialog box will appear.



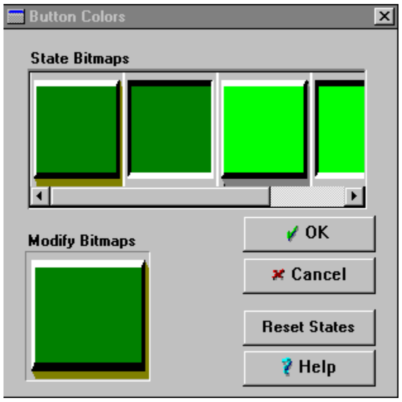
Operation: Toggle

Tag: Motor

Button Operation Dialog Box

The selection of button styles which appears in the Select Style scroll bar window depends upon whether the Datapanel is color or black and white. The lower left corner of the box varies according to the Operation selected. The illustration shows the appearance of the box for the Toggle operation.

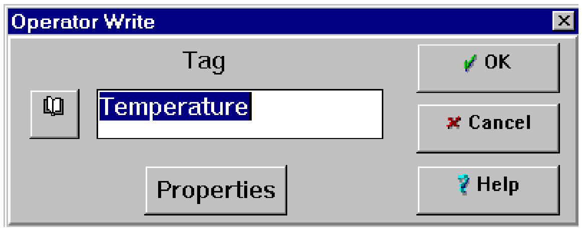
- Use the scroll bar across the top to view available button styles. Click one state of the desired style.
- Click the arrow in the Operation field to access a drop-down list: Jog, Toggle, Direct Write.
- Click the Modify Bitmaps button to access the Button Colors dialog box. Select the desired color for that state. Click OK.
- Click the other state of the desired style.
- Select one of the options on the list and follow the instructions for that operation given below.
- If applicable, specify the Lamp Tag. The button display acts as if there is a "lamp" inside the button, i.e., the button is brighter when the lamp is lit and darker when the lamp is not lit. The lamp tag must be a digital and is used to determine whether the button lamp is to be illuminated.



- Specify the text for the two states of the button.
- If desired, use the Color buttons to modify the color of the text for the two states of the push button bitmap. Click the Button Colors button to access the Button Color dialog box. You can modify the color of the button by clicking the Modify Bitmaps button
- Click OK to return to the page design screen.

Configuring Drive Out (Operator Write)

Click the Drive Out button to initiate the Drive Out design operation. Move the mouse pointer to the location on the page where you want the text to appear. Click and hold the left mouse button, drag a rectangle of the desired size and location, release the button. The Operator Write dialog box will appear.



Tag

Temperature

- Specify the tag.
- On color models, click the Properties button to configure the Drive Out colors.
- Click OK. The drive out display will appear on the page in the location previously selected and the tag will be added to the list of drive-out points.

In the Run Mode, this function is activated by pressing the Drive Out function key. A list of drive-out points is presented. The operator selects the desired tag. The operator will be prompted for a value input. This value will be output to the selected tag.

You can also string together multiple drive outs using a MACRO under one function key. The actual values to be driven out must be part of the MACRO key when that is done.

Note

On Datapanels that do not have function keys, such as the 320, 1060, and 1062 models, you must configure a Touch region to accomplish the Drive Out using a Macro operation.

Configuring Output Operations

Macro

Function Keys and Touch Areas may be configured as a Macro or multiple key stroke sequence. This enables the operator to perform several operations with one keystroke. The following Macro functions can be used separately or in combinations.

[GR] Graphic, return to last page displayed

[OV] Overview, go to Overview browser

[AL] Alarm, go to Alarm screen

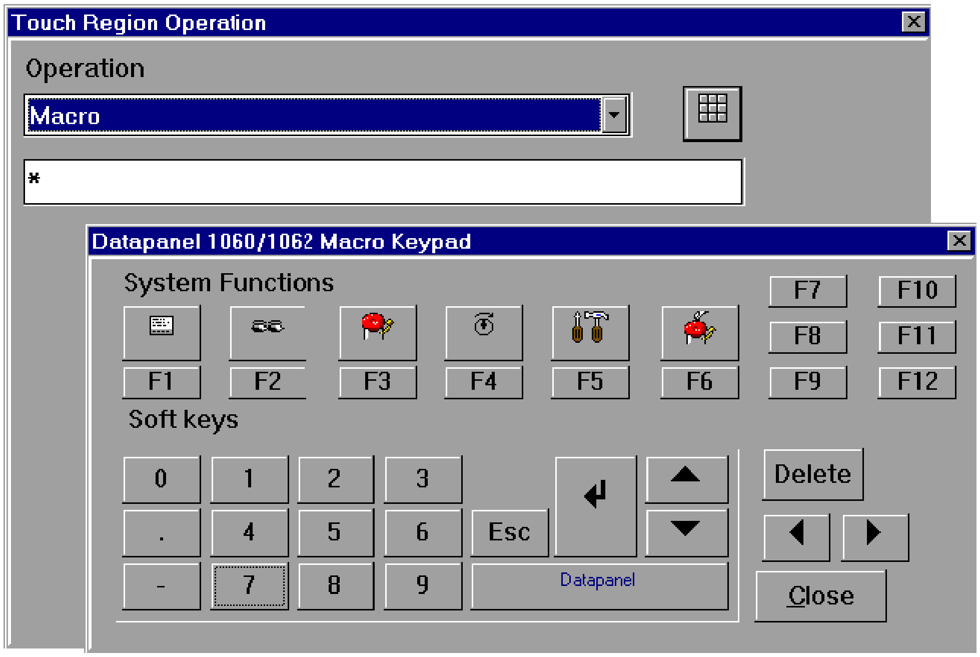
[DO] Drive Out, send a value to the PLC. The Drive Out [DO] function is used to change values in the PLC. Drive Outs are used in Macro functions where more than one value may be changed with an F-key or touch area or value changes are combined with page changes.

[MM] Mode, go offline or make O/I adjustments

[AA] Alarm Acknowledge, one to acknowledge, two to clear

Creating a Macro

Double click on a Function Key or add a Touch Area to a Graphics page. Select Macro from the drop-down list. If you are configuring a function key, enter the label you want to appear on the key (5 characters max, except on the Model H which accepts 9.) Click the macro keypad button to access the Macro Keypad dialog box. The dialog box shown is for the Model 1062, the boxes for the other models are similar in appearance and function.



Touch Region Operation

Operation: Macro

*

Datapanel 1060/1062 Macro Keypad

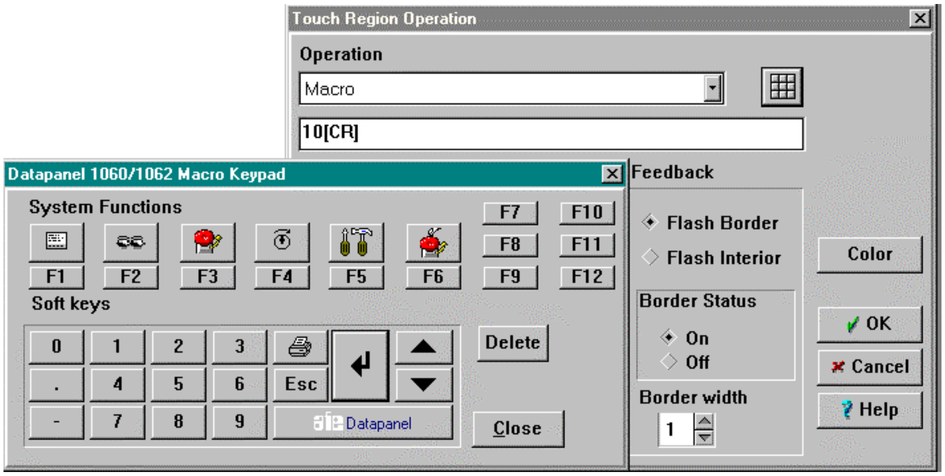
The asterisk that appears in the macro string acts as a cursor. When you click a function button, the functions is entered in front of the asterisk. To move the asterisk forward and back in the string, click the left and right arrow keys. This allows you to insert and delete in the middle of a macro string rather than having to delete back to that point and re-enter the remaining part of the macro.

Macro Examples

Page Changes

To create a Macro that goes to Graphics page 10:

> In the Macro Keypad dialog box, click the keys: 1, 0, CR. 10[CR] will be displayed.
>
> Close the Macro Keypad dialog box. Click OK in the Function Key or Touch Region dialog box to accept the macro.



Touch Region Operation

Operation: Macro

10[CR]

Feedback: ◆ Flash Border ◇ Flash Interior

Border Status: ◆ On ◇ Off

Border width: 1

To go to the next page click the down arrow key. [DN] will be displayed. Close and save.

To go to the previous page click the up arrow key. [UP] will be displayed. Close and save.

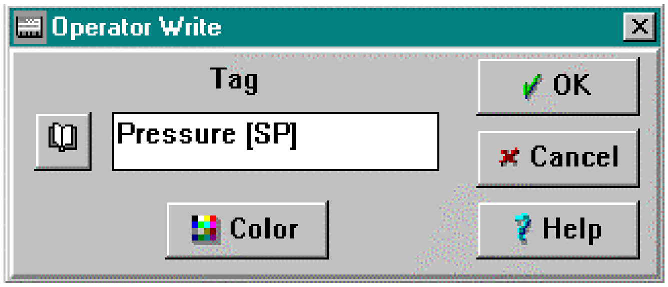
To go to the last page displayed click the Page button. [GR] will be displayed.

Off-Line

To create a macro that takes the Datapanel off-line or access operator setup functions such as adjust contrast and keypad size adjustment select [MM] mode function. (If you have not configured an offline F-key or touch area, a PS2 keyboard can be used. For Models 320 and 106X, F5 will take you off-line. Models 150, 160, and 240 can be taken offline by pressing F1 and F6 keys simultaneously.)

Drive Out with Page Change

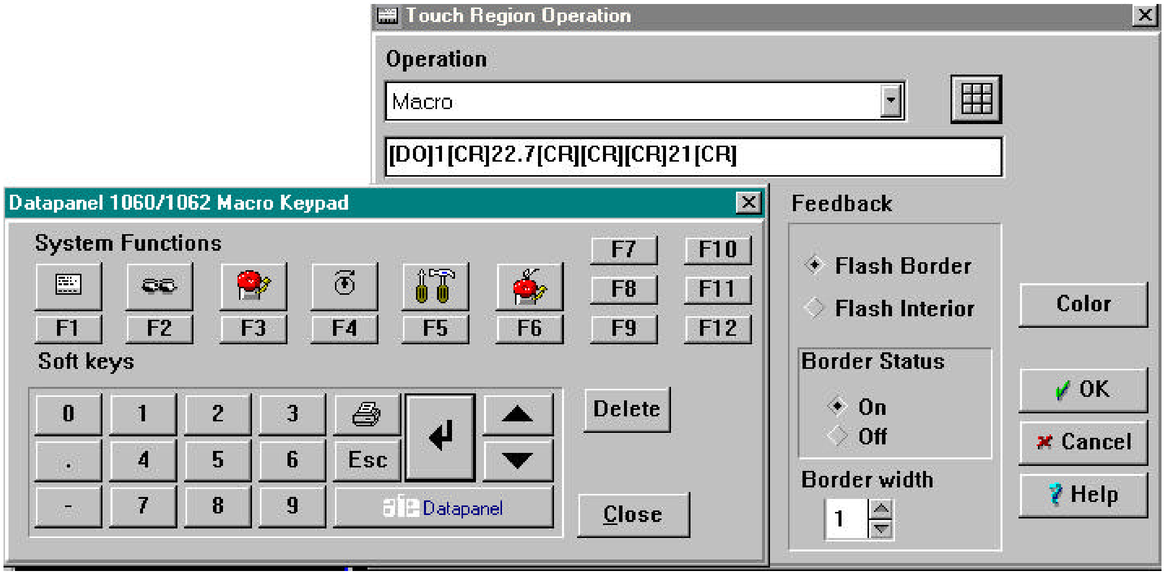
With one operator input a Macro may be configured to send a preset value to the PLC and change page on the Datapanel simultaneously. For this example an Analog Tag “Pressure (SP)” must have a value of 22.7 PSI sent to it as the default setpoint. At the same time, the Datapanel must change to page 21 for the next operator input. First the Drive Out must be added to the screen. From the Graphics page select: Drive Out function. Move the cursor anywhere on the screen and click to place. The first DO will put a number 01 on the screen. Additional Drive Outs will be numbered sequentially. Unless you are doing a macro which will stop and wait for operator input, it does not matter where you put the Macro or what color it is given, it will not be seen in normal operation. It is import to note that if you delete a Drive Out, subsequent Drive Outs will change number, which will make the Macro operation unpredictable. After you have selected the correct tag from the Browser, the dialog box will look like this:


Operator Write
OK
Cancel
Color
Help

Tag

Pressure [SP]

After you click OK you are now ready to proceed with the Macro creation. For this example a touch area is used for the Macro. F-key Macro configuration is similar except for the 5 or 8-character description, which is added to the F-key label. Select Touch area and place on screen. The configured Macro will look like this:


Touch Region Operation
Datapanel 1060/1062 Macro Keypad
System Functions
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
Soft keys
0
1
2
3
.
4
5
6
Esc
-
7
8
9
Datapanel
Delete
Close
Feedback
Color
OK
Cancel
Help

Operation

Macro

[DO]1[CR]22.7[CR][CR][CR]21[CR]

● Flash Border

○ Flash Interior

Border Status

● On

○ Off

Border width

1

To create this macro, click the following buttons in sequence:

[DO]1 – Select Drive Out 01 which in this case is Pressure [SP]

[CR] - enters the selection

22.7 – is the value in PSI that will be sent to the tag

[CR] enters the value

[CR][CR] clears the keypad memory buffer (if only one [CR] is entered, the next numeric entry would then be a DO number selection)

21[CR] – go to page 21

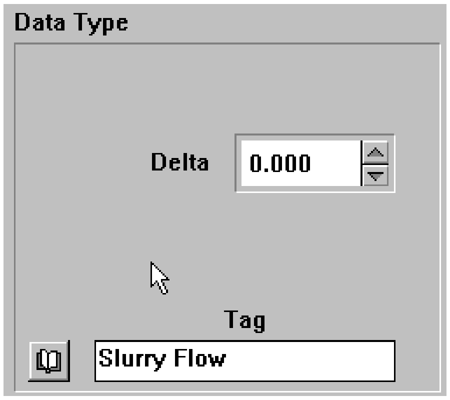
Maximum Macro Length

For Datapanel Models K, J+, 150, 160, and 240 the maximum number of keystrokes that may be contained in Macro is 25. For the Datapanel Models 320 and 106X, the maximum number of keystrokes is 64. If the keystroke string needs to be checked, and the maximum number of keystrokes exceeds the viewing window, you must add a [CR] to scroll to the end of the string. The [CR] must be removed before saving by either deleting it or canceling the dialog box.

Multiple Drive Out Macro

Complex Macros may be constructed to change both Analog and Digital tag values, with one operator input. In the following example the operator will turn on the Digital Tag “Fan Motor” by writing a 1, Set the Analog Tag “Process Setpoint” to 59, and change to page 2. After assigning Drive Out 01 to Fan motor and Drive Out 02 to Process setpoint, the Drive Out string would look like this: [DO]1[CR]1[CR][CR]2[CR]59[CR][CR][CR]2[CR].

Configuring the Ramp Function



Delta 0.000

Tag Slurry Flow

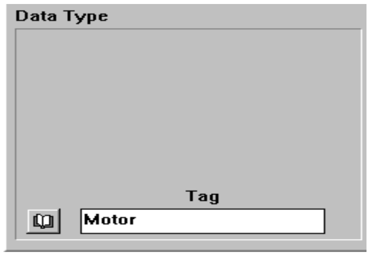
The Ramp function enables the operator to increase or decrease the value of a pre-selected analog tag by a specified increment with each press of the up/down arrow keys. To configure a ramp operation:

- Select Ramp. The dialog box will change appearance to provide the fields necessary for ramp configuration.
- Select a Tag.
- Enter a value in the Delta field. If the entered value is less than the smallest increment of the tag, the value will be interpreted as zero.
- Click OK to return to the page design screen.

In the Run Mode, when this F-Key or touch region is pressed, a prompt will appear displaying the tag value to be written to the controller. The operator then presses the up/down arrow keys to increment or decrement the tag by the programmed amount. When the desired value is reached, the operator presses ▬. This causes the displayed value to be written to the tag and to the controller. Pressing ▬ a second time will exit the ramp function.

Configuring the Toggle Function

When the Toggle option is selected, the inverse of the current value of the configured digital tag is sent to the controller with each press of the embedded F-key, touch region, or push button. To configure a toggle operation:



Tag: Motor

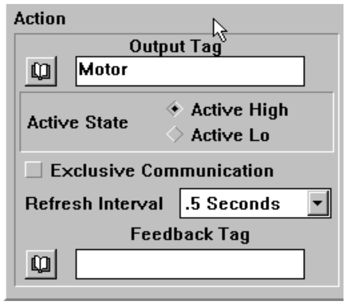
- Select Toggle. The dialog box will change appearance to provide the fields necessary for toggle configuration.
- Select a Tag.
- Click OK to return to the page design screen.

In the Run Mode, each time this F-Key, touch region, or push button is pressed, the associated tag will toggle between digital values. This application is useful for switch-like on-off functions.

It is important to note that toggle requires feedback from the controller to work successfully. Activating a toggle in the Datapanel causes the inverse of the value that the Datapanel has for the tag to be sent. If the refresh of the tag is too slow, read after write was not selected, or there are comms errors, the toggle will continue to send out the same value. Also, you cannot use two inputs in a digital tag that is used in a toggle operation.

Configuring the Jog Function

The Jog option performs the function of a momentary push button which enables the operator to output a value to the PLC for as long as the button is pressed or to output a value in short bursts by pressing the button repeatedly. To configure the jog operation:



Output Tag: Motor

Active State: ● Active High ○ Active Lo

☐ Exclusive Communication

Refresh Interval: .5 Seconds

Feedback Tag:

- Select Jog. The dialog box will change appearance to provide the fields necessary for jog configuration.
- Configure the following tags:

  Feedback Tag. This is an analog tag that provides operator feedback to display the result of the operation. (For example, the position of a machine part that is being jogged into position.)

  Output Tag. This identifies the PLC address assigned to this button function.

  Lamp Tag. Optional for pushbuttons only. Controls the lamp on/off. Must be a digital tag.

Note: All of these tags must use the same channel if configured. WinCfg will allow you to select different channels, but an error will be generated at runtime if the 2nd (and optional 3rd) tag(s) do not match the channel of the tag being jogged.

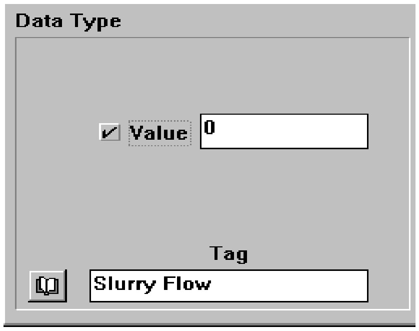
- Configure the Active State.

	Pressed	Released
High	1	0
Low	0	1

- Configure Refresh Interval. This is the rate at which the discrete value will be transmitted and the feedback polled.
- Click the Exclusive Communication check box if you want the fastest possible feedback time between the PLC and the Datapanel. This allows only the Output and Feedback tags to run on the communications link. This stops all tags except the output and feedback tag from running on the communications link. This will therefore stop all alarms while the button is depressed.
- Click OK to return to the page design screen.

Configuring Direct Write

The Direct Write function enables the operator to drive out specific values directly to analog tags or digital tags. In the Run Mode, each time this F-Key, touch region, or push button is pressed, the value will be written to the associated tag. This application is useful for resetting process. If no value is entered during configuration, an operator prompt will appear asking the operator to input a value.



Data Type

☑ Value 0

Tag

Slurry Flow

To configure a direct write operation:

- Select Direct Write. The dialog box will change appearance to provide the fields necessary for direct write configuration.
- Select a Tag.
- If desired, click the value checkbox and enter a value in the Value field.

Click OK to return to the page design screen.

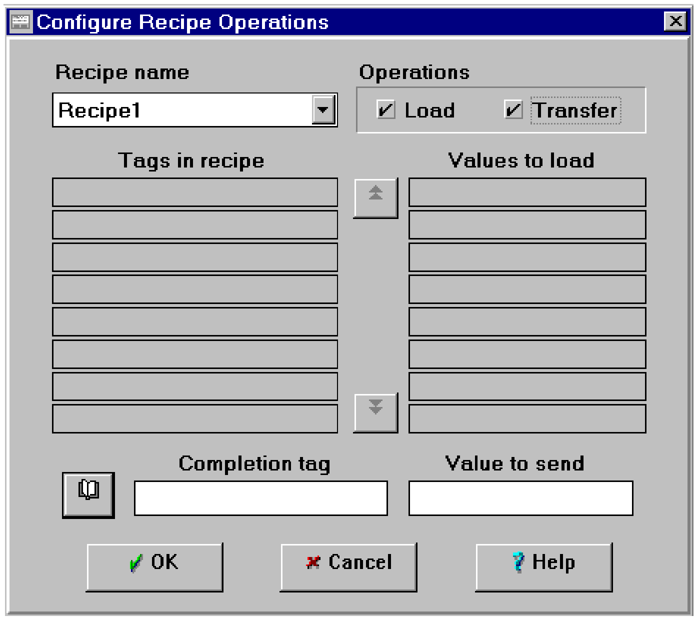
- In the Run Mode, each time this F-Key, touch region, or push button is pressed, the value will be written to the associated tag. This application is useful for resetting process. If no value is entered during configuration, an operator prompt will appear asking the operator to input a value.

- If you want a single value to be hard coded, enter a value in the Value field. If you leave the value unchecked this will be an operator write without the need for extra keypresses.

Configuring Recipe Load/Transfer

Touch regions, Pushbuttons and Function keys can be configured to implement the recipe load and transfer functions. To use these functions, you must first create a recipe group, which is a list of recipe tags with a name. This function loads preconfigured values into the associated tag, and/or transfers the current values of the recipe tags to the controller (either or both operations can be selected).

To configure a recipe operation, select Recipe Load/Transfer in the Operation list box. The dialog box will change appearance. Click the Recipe button. The Configure Recipe Operations dialog box will appear.



Recipe name: Recipe1

Operations: ☑ Load ☑ Transfer

Configure Recipe Operations Dialog Box

Recipe Name

Select the recipe group that you want load and/or transfer.

Operations

Load

Loads preconfigured values into the tag. If you only select a Load operation, the values in the recipe tags can be edited by the operator if standard operator/direct write are configured.

Transfer

Downloads the current values in the recipe tags to the controller. The only way to get a recipe value to the controller is through a recipe transfer. (Driving out to a recipe tag only updates the local copy of the data.)

Tags in Recipe

Lists the recipe tags that make up the selected recipe group.

Values to Load

If the Load operation is selected, you must enter a value for each Recipe tag. (Digital tags can have a value of 0 or 1.)

Completion Tag

If the Transfer operation is selected, you can select a completion tag, which can be either digital or analog. The value specified will be driven out to this tag when the recipe tags have been sent to the controller. If there is an error in transferring a recipe to the controller, the operation will halt at the tag with the problem, and the standard communications error for that tag will appear. The rest of the recipe tags and the completion tag will not be updated.

To select a completion tag, click the Browse button. The Tag Browser dialog box will appear.

Value to Send

If a completion tag is selected, you must specify a value to send.

Chapter 9

Configuring Datapanel Communications

This chapter describes how to configure the Datapanel to communicate with the controller and with other Datapanels. The following topics are covered:

- Port Settings
- Clock Communications
- Communications Blocks

Overview

Multicomms

Multicomms is a feature of v3.3.0 Datapanels that allows two, possibly different, protocols to loaded into the panel. Each protocol utilizes a **different communications port** thus allowing two PLCs to be connected to the Datapanel. This feature is limited to panels with two ports. Additional restrictions are:

- Certain protocols (#25, #141, & #92) can't be loaded twice and can only be used on COM1.
- The print function on a DP320T will use the parallel port (LPT1) if both ports are configured for multicomms.
- The embedded panels (160, 240e, and H) will use which ever serial port is free (if any) for printing.
- Note that the Multicomms feature is not available on K, J+, and 240T Datapanels.
- If a protocol is configured for both COM1 and COM2, serial printing is disabled. If COM2 is used, serial printing will occur on COM1. If only COM1 is used, serial printing occurs on COM2 (like normal).

Note: For the 320T Datapanel, if COM1 and COM2 are configured, select Print Using Parallel Port in the System Settings dialog box to print.
The DP1000 models do not support serial printing, only parallel.

Multidrop

This configuration consists of connecting of two PLCs to the same port by daisy chaining the two devices together. This capability has both electrical and protocol based requirements.

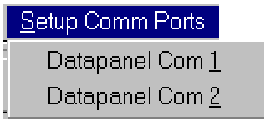
Electrical: The PLC or other device must have an RS422/485 interface. Datapanels which don't have RS485 ports (like DP-K, J+ & 240T & 1000s) must use an external 485 converter. The DP150, 160, 240E support 485 on COM1, while the H supports 485 on both ports.

Protocol: Some PLCs, regardless of their electrical interface, don't support multidrop. These are called point-to-point connections or single point connections. The remote address that would be specified in the tags for these PLCs would not include a device or node ID.

In contrast, SNP or SNP/X protocols do support multidrop. The first field in the remote address is a PLC name which is used to select which PLC on the network is to receive the request.

Port Settings

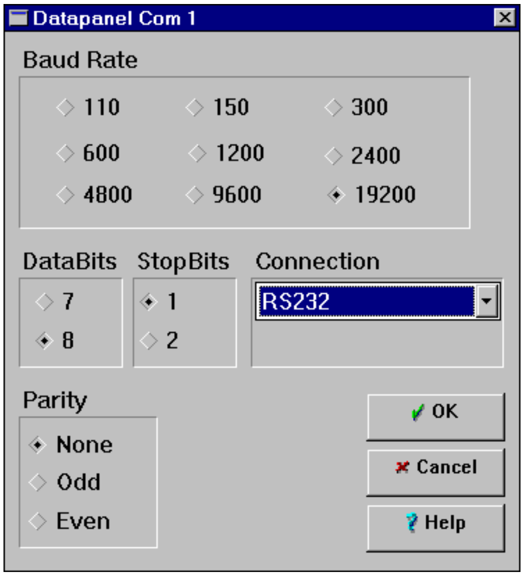
The Setup Comm Ports menu offers two choices:



- Datapanel Com1 (for communications between the controller and the Datapanel)
- Datapanel Com2 (for output to a printer or communication with another Datapanel)

These options can be accessed directly by clicking the appropriate Communications Port button.

Datapanel Com 1 Port Dialog Box



Datapanel Com 1

Baud Rate: ○ 110 ○ 150 ○ 300 ○ 600 ○ 1200 ○ 2400 ○ 4800 ○ 9600 ● 19200

DataBits: ○ 7 ● 8

StopBits: ● 1 ○ 2

Connection: RS232

Parity: ● None ○ Odd ○ Even

Click the Communications Port button to access the Datapanel Com1 dialog box. This box is used to configure the data transmission characteristics for the controller and the Datapanels. The transmission characteristics are controller-dependent. These values must match those configured in the controller. The box is divided into four fields, all of which must be configured. (The Connection field is provided for Datapanel 150 only.)

Baud Rate

Select the rate by clicking on the appropriate option box.

Data Bits

This field is used to set the number of data bits in a character to be transferred. This will be either 7 or 8 bits in length but this is protocol dependent and the appropriate protocol must be referenced for this information. The character length will usually be a fixed value as defined in the protocol. .

Select the number of bits by clicking on the appropriate option box.

Stop Bits

Select the number of stop bits to signal the end of a character by clicking on the appropriate option box.

Parity

Select the desired form of parity by clicking on the appropriate option box. This is protocol dependent and must be as required for the controller being used.

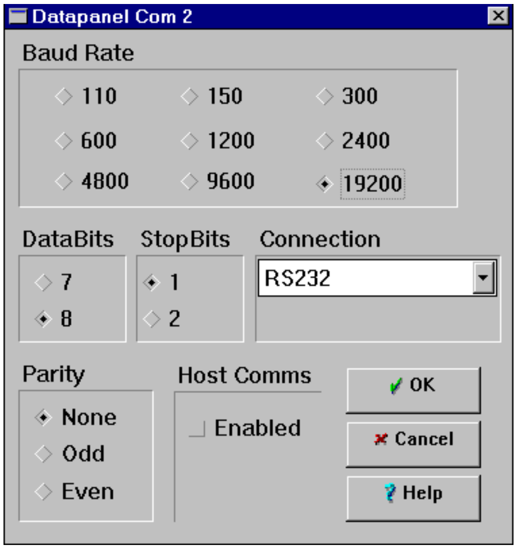
Connection

Many Datapanels provide only for the use of RS 232 for the Comms Port connection and will not display this portion of the dialog box. The Connection field appears for Datapanels that allow the use of RS 485 as well as RS232, such as Datapanel 150. The drop-down list offers three choices:

- RS232
- RS485 Full (4 wire)
- RS484 Half (2 wire)

Datapanel COM 2 Port Dialog Box

Click the Printer Port button to access the Datapanel Com2 dialog box. This box is used to configure the Datapanel data serial transmission characteristics or for outputting to a printer. The box is divided into four (or five) fields. Baud Rate, DataBits, StopBits, and Parity are configured as described for the Com1 Port. (The dialog box shown in the figure is a composite.)



Datapanel Com 2

Baud Rate: ○ 110 ○ 150 ○ 300 ○ 600 ○ 1200 ○ 2400 ○ 4800 ○ 9600 ● 19200

DataBits: ○ 7 ● 8

StopBits: ● 1 ○ 2

Connection: RS232

Parity: ● None ○ Odd ○ Even

Host Comms: ☐ Enabled

The Connection field is provided for Datapanel 150 only.

The Host Comms field appears only for the J+ and 240T Datapanels. To use the Com2 port for communicating with another Datapanel, check the Enabled box. When Host Comms is enabled, an additional box will appear for entry of a Node ID for Datapanel #1. For more information, see “Host Comms for J+ and 240T Datapanels” in Chapter 13.

For Host Comms functionality, Datapanel models H, DP160, DP240E, DP320, and 1000 require protocol 80 to be loaded.

Clock Communications

Certain Datapanel models lose the time reference when the power is turned off. Model H retains the clock for a minimum of 14 days. Models K and 150 lose the clock as soon as they are turned off. If the real-time clock is lost, it will restart on power up using default settings until the time and date parameters are set. Thus, Models K and 150 always need the clock reset and Model H may need the clock reset if it is off longer than 14 days. (All other Datapanel models retain the real-time clock indefinitely.) The Datapanel Off-line Utilities menu contains the Set Time and Date Option which can be used to set the Real Time Clock Time and Date parameters from the Datapanel.

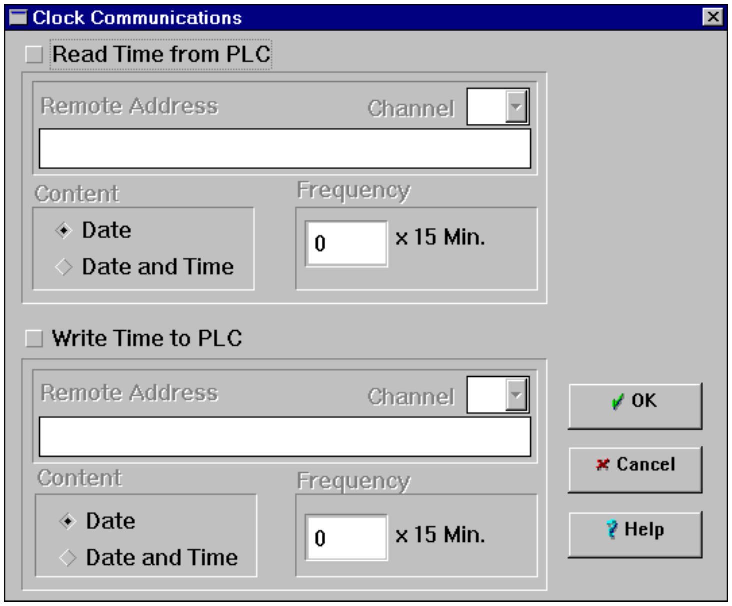
In both the controller and the Datapanel, the clock is stored in six 16-bit registers, one each for year, month, day, hour, minute, and seconds. Clock Communications are provided for obtaining time information from the controller and using that data to set the real-time clock in the Datapanel or using Datapanel time to set the real-time clock in the controller. Although essential for Models H and K, this synchronization of clock settings is useful for all models in the Datapanel Range. Two types of communications are used for this purpose:

- Read Clock Communications. This is used to read the time and date information from the controller address specified in the Remote Address field and store the data in Datapanel registers. The specific registers are listed in Chapter 13.
- Write Clock Communications. This is used to transfer the time and date data from the Datapanel Registers to the address in the controller specified in the Remote Address field. This feature is seldom used since the controller is generally used as the time reference. However, if the controller clock should need resetting, the function can be used to do that.

Configuring Clock Communications

Select Clock Communications from the Configuration drop-down menu or click the Clock Communications button to access the Clock Communications dialog box.

Clock Communications Dialog Box



Clock Communications

☐ Read Time from PLC

Remote Address Channel

Content

● Date

○ Date and Time

Frequency

0 × 15 Min.

☐ Write Time to PLC

Remote Address Channel

Content

● Date

○ Date and Time

Frequency

0 × 15 Min.

This dialog box has two main sections:

- Read Time from PLC
- Write Time to PLC

When the Read Time from PLC is enabled, the fields of that section are active and the appropriate parameters must be configured. When Write Time To PLC is enabled, the fields of that section are active and the appropriate parameters must be configured.

Remote Address

Enter the Remote Address within the controller to be used for the transfer of Real Time Clock data. This is controller-specific and reference must be made to the appropriate protocol documentation.

Frequency

Enter a value for the frequency of transfer. The Clock Communications will transfer the real time clock data once on start-up and thereafter at the interval specified in the Frequency field.

Content

Click the appropriate checkbox for either Data only or Data and Time.

Communications Blocks

Communication between the controller and the Datapanel can be accomplished by configuring data and commands into communications blocks (comms blocks) of data and transmitting the blocks over a serial link. WinCfg configures the Datapanel to automatically prepare blocks in the specific format or protocol required by the particular controller. This process is normally transparent to the user. However, there may be occasions when you want to configure comms blocks for special purposes. The material in this section is provided to enable a knowledgeable user to perform customization of comms blocks.

Before configuring comms blocks, you should consider a number of factors, such as communication parameters (baud rate, character bits, stop bits parity etc.), controller memory organization, quantity of data, and priority of data. Some of these factors may not apply to all applications, but should be carefully considered to achieve efficient use of the serial communications.

When configuring communications blocks, clicking in a field which requires a remote address causes the remote address wizard to the supply a string similar to the last one used. This speeds address entry because the address can usually be customized for the current use by changing a few characters. To disable or enable this feature go to the File menu and select Preferences.

Communications Blocks Structure

The purpose of the comms block is to enable Datapanels to communicate with a specific PLC or other controller device. Information stored in the comms blocks is used to control the transfer of data between the controller and the Datapanel. This information identifies the type of controller to be accessed and the characteristics of the communications link between the Datapanel and the controller. There are several types of comms blocks all of which are configured to transfer data between the controller and the Datapanel.

Controller Memory Organization

When determining the type and location of data stored within a controller, it is necessary to consider if the data is to be read from or written to the Datapanel. Where possible, data should be stored in sequential registers and bits, enabling a single comms block to read a block of data in one request. Arranging data sequentially and reading data in blocks reduces the number of configured comms blocks. This reduces time spent encoding/decoding messages on the serial link, reduces overall processing time, and improves the overall performance.

Quantity of Data

The quantity of data transferred in a single comms block is another factor that affects the efficiency of serial communications. The Number of Points field in a comms block should be set to transfer as much data as possible for the application. This is protocol-limited, but every effort should be made to use the maximum number permitted.

Reading or writing as much data as possible in a single request:

- reduces the number of comms blocks
- reduces processor overheads in calls to communication software
- reduces time spent in encoding/decoding messages
- may reduce total number of characters on serial link

Priority of Data

The Frequency field defines the time periods at which the Datapanel will attempt to transfer data. The lower the frequency the higher the priority. However, a frequency of 0 will result in the comms block remaining inactive, a frequency used normally only for Demand Type comms blocks or for an operator drive out.

Data Importance

Blocks of data used to monitor alarm conditions need to be read frequently. Data not in this category or variables that change infrequently, for example, at the end of an 8 hour shift, can use a frequency set at a low sample rate. The efficiency of the Communications Link can be improved by:

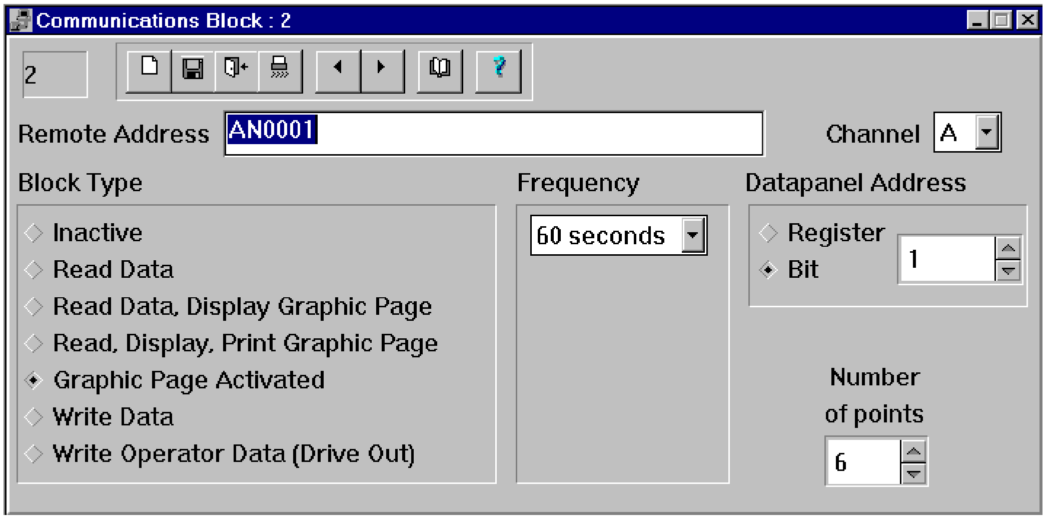
- Restricting the frequency of the comms blocks.
- Using Embedded Comms Blocks. These can be used for low priority, non-alarm data transfer and are discussed in subsequent sections.
- Reducing the number of comms blocks by reading data in large blocks.
- Using Demand Comms Blocks. These are bit-activated blocks. That is, they read or write data only when a bit is set.

Configuring a Communications Block

The following steps are required to configure a communications block:

1. Open the Communications Block dialog box.
2. Enter the Remote Address.
3. Choose the type of comms block to be used.
4. Choose the required frequency.
5. Enter the Datapanel Address - register or bit number.
6. Enter the number of points to be transferred via this comms block.

To configure a new comms block or edit an existing one, select Communications Block from the Configure menu. The Communications Block dialog box will appear.



Communications Block : 2

2

Remote Address AN0001

Channel A

Block Type
○ Inactive
○ Read Data
○ Read Data, Display Graphic Page
○ Read, Display, Print Graphic Page
● Graphic Page Activated
○ Write Data
○ Write Operator Data (Drive Out)

Frequency 60 seconds

Datapanel Address
○ Register
● Bit
1

Number of points 6

Communications Block Dialog Box

The row of icons displayed across the top of the dialog box allow rapid control of certain comms block functions such as opening, closing and saving the comms block.

To select an existing comms block, click the Browse button. The Communication Block Browser Dialog Box will appear.

Remote Address

Enter the address of the starting location of internal registers or bit tables in the remote controller. This enables a comms block to be directed to specific data in the controller. Refer to the controller manual to determine the functions of the controller register and bit tables to ensure that the correct data is being requested. The format of the Remote Address field is dependent on the protocol type selected.

For format information on the specific protocol you have selected, refer to the Protocol.hlp file provided with WinCfg.

Block Type

This field is used to select the type and the function of comms block.

Inactive

Disabled. Used only during testing/configuration.

Read Data

This comms block requests the number of variables specified in the Number of Points field to be read to the Datapanel database from the controller. The data is read starting at the register or bit number specified in the Remote Address field and transfers the values to Datapanel registers or bit tables specified in the Datapanel Address field.

Read Data and Display Graphic Page

This type of comms block is used to force the display of a page. The comms block requests analog values from two controller registers, the first of which is specified in the Remote Address field. The first register must contain a value corresponding to the number of the page to be displayed. For compatibility with other Datapanel systems, the address of the second register must be set to 0.

The comms block monitors the first controller register (page number) at the frequency specified. When it detects a change from the initial zero to the requested page number it forces the display of the relevant page. Subsequently, when the register value changes to another page number, the comms block detects the change and forces the display of the new page. To force the same page to be re-displayed, set the first register to zero for a period longer than the comms block frequency, then set the register to the required page number. This allows the system to detect a change and forces the same page to be displayed. After a page has been forced to appear, the operator can change the page display in the normal manner using the operator keys.

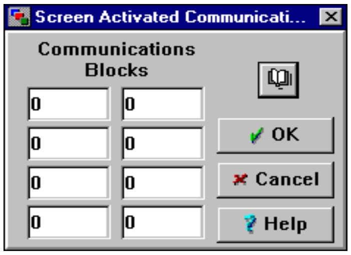
This type of comms block can only be configured for comms blocks numbered 1 to 64. Comms blocks numbered greater than 65 will not function. Although no Datapanel registers are affected, the Datapanel Address field must be set to 1 to ensure the database will be updated. Also, be sure to set the Number of Points field to two to enable the comms block to read the second register.

Read, Display and Print Graphic Page

This type of comms block works in an identical manner to the Read Data and Display Graphic Page except that after forcing the page to display, the page is then printed. When using a Datapanel Model K or 150, the page will not be printed.

Graphic Page Activated

Pages can be configured with up to eight Embedded Communications Blocks which are activated when the page in which they are embedded is displayed. The embedded comms blocks must be of the Graphic Page Activated type. When the embedded block is activated, it performs like a Read Data block. When the page is changed, the comms block is de-activated until a page containing the embedded comms block is displayed. Low priority or non alarm variables should be assigned to this type of comms block and high priority. Alarm or trend variables should be assigned to a Read Data comms block. This reduces the amount of information continuously requested from the controller and improves the overall performance of the Datapanel.



Communications Blocks

0 0
0 0
0 0
0 0

To use the Graphic Page Activated block, configure the comms blocks and then allocate (embed) them in the desired page using the Embedded Comms option when the page is configured. The Embedded Comms Block number can differ from that of the page.

Write Data

Datapanels are capable of sending information to a controller. To do this one of two types of comms blocks must be used: Write Data or Write Operator Data. A Write Data comms is used to write a block of data at a given frequency. It can write multiple bits and registers unless there is something in the specific protocol help that states that driver cannot. Refer to the online Help for the relevant protocol information. Data held in reserved registers, such as time/date (Register 491 onwards) can be transmitted to a controller using this type of comms block.

Write Operator Data (Drive Out)

This is an obsolete feature that is retained for backward compatibility. There is no usage in the current system for a write operator data comms block.

Frequency

Click the down arrow to access a drop-down list of valid values of the time interval at which variables are to be transferred to or from a controller. Click on the desired value.

If a frequency of 0 seconds is selected, the comms block remains inactive and is used in “Demand Only” circumstances, such as when triggered by a Demand Bit in the database or manually driven from a Graphics Page or Overview display. This differs from the selection of Inactive as a comms block type. When an Inactive comms block is selected, it will remain totally inactive and will not respond to a Demand Bit.

Datapanel Address

Select either Register or Bit by clicking in the appropriate checkbox. Enter the Datapanel Register or Bit Table address (number) to or from which the data is to be transferred. Refer to Chapter 13 for a list of available registers and bit tables.

Data types for Remote Address and Datapanel Address should match, i.e., controller register to Datapanel register and controller binary data to Datapanel bits. If conversion from binary data to register is required, it should be executed in the controller prior to transmission. Some protocols allow controller register data to be stored in Datapanel bits. For more information, refer to the protocol help.

Number of Points

Enter the number of consecutive analog or digital variables which are to be transferred via this comms block. If this number is greater than 1, the system will request a block of data from the controller register or bit tables starting at the location specified by the Remote Address field. This data will be stored in the Datapanel starting at the location specified in the System Address field.

When completing the Datapanel Address, the number of available points varies depending on whether register or bit has been selected. The starting point number in the Datapanel Address may be critical. If too many points are allocated to the comms block, the total may exceed the total allowed. For example, if the Remote Address field specifies a register variable in the controller of 012 and the Datapanel Address field specifies a System Register of R048 and the Number of Points is 15, controller register variables 012 to 026 will be transferred to System Registers R048 to R062, or vice versa in the event of information being sent to the controller. Refer to the relevant protocol information for the Number of Point restrictions. These are usually related to data types.

Executing Comms Blocks on Demand

Certain comms blocks, called Demand Comms Blocks, can be sent from the Datapanel or the controller on demand. The Datapanel Bit Table bits which are reserved for implementing this feature are described in Chapter 13. These bits are correspondingly related to comms block numbers 1 to 100 (200 on Model 320T). These bits are normally zero but can be set to 1 by either the controller or by the operator executing a Drive Out. When a bit is set, the corresponding comms block is activated immediately. It is activated only once, independently of the current frequency setting of the comms block. As soon as the block is executed, the bit is reset to zero. Demand Comms Blocks are given priority over currently executing comms blocks. Demand Comms Blocks are often used for infrequently-required data which is only collected on demand. This use of Demand Comms Blocks helps prevent overloading of the serial communications by reducing the number of data transmissions.

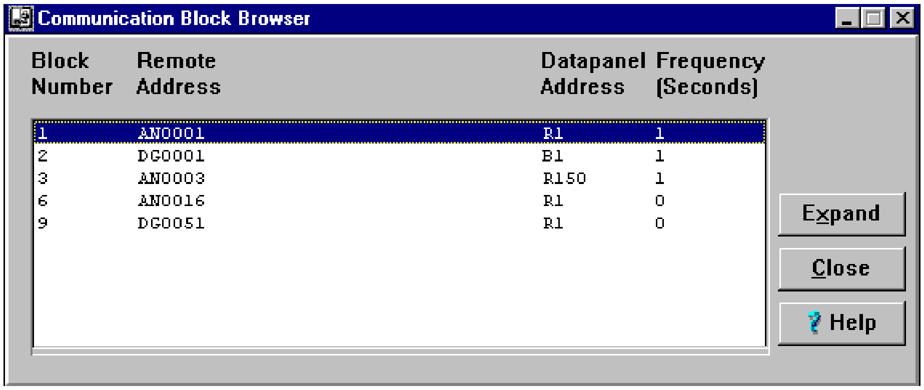
The types of comms blocks which can be used as Demand Type Comms Block are:

- Read Data
- Read Data and Display Page and Print
- Page Activated
- Write Data

Initiating a Demand Comms Block from the controller requires two comms blocks. The first block must be configured to read data from the controller into the Datapanel to set the desired bit. Setting the bit activates the second comms block which accomplishes the desired end.

Communication Block Browser Dialog Box

Clicking the Expand button causes the label to change to Collapse and all blocks to be displayed. Clicking the Collapse button causes the label to change to Expand and only configured blocks to be displayed. Double clicking on a block causes the chosen block to be opened for editing.



Block Number	Remote Address	Datapanel Address	Frequency (Seconds)
1	AN0001	R1	1
2	DG0001	B1	1
3	AN0003	R150	1
6	AN0016	R1	0
9	DG0051	R1	0

Configuring Datapanels for Host/Slave Communications

Datapanel 160, 240E, H v2, 320T, and Series 1000

To enable host/slave communications for these models, protocol 80 must be loaded on the port in question. To set the Node ID, click the Advanced button on the Communications Protocol dialog box for protocol 80.

Datapanel J+ and 240T

Hostcomms remains a feature on the Datapanel Com2 dialog box for these models because they do not support the multicomms feature. To use the Com2 port for communicating with another Datapanel, click the Host Comms Enabled checkbox in the Datapanel Com2 dialog box.

The required hardware configuration is shown in the figure below. Datapanel #1 is connected to the controller via its comm port. The printer port on Datapanel #1 is connected to the comm port on Datapanel #2. With Host Comms enabled, Datapanel #2 can now communicate with the controller, using Datapanel #1 as an intermediary. Datapanel #1 and Datapanel #2 can be configured with different displays, alarms, etc. When Host Comms are enabled:

- The Modicon PLC (RTU Slave) communications protocol (protocol number 80) must be used in Datapanel #2.
- The Modicon PLC (RTU Master) communications protocol (protocol number 15) must be used in Datapanel #1.
- The values entered in the Datapanel Printer Port for Datapanel #1 must be compatible with the comm port settings for Datapanel #2.
- An additional window will appear for entry of a Node ID for Datapanel #1.
- All alarm printing is disabled.

Host Comms can also be enabled from the Off-line option when operating a Datapanel in Run Mode.

For additional details, see “Host Comms for J+ and 240T Datapanels” in Chapter 13.

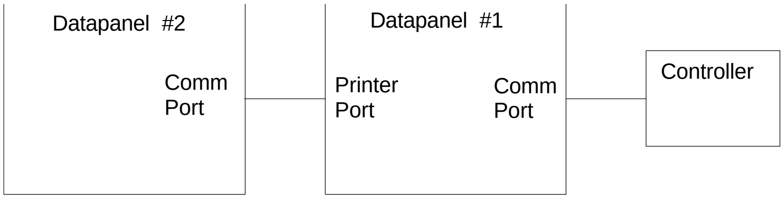


Figure 9-1. Configuration for Using Host Communications

PLC-Invoked Datapanel Page Change Operation

To use the PLC to change pages in the Datapanel, you will need to configure a Communications Block. From the main toolbar in WinCfg, select Configure, Communications Block. For the Block type, select ‘Read Data, Display Graphic Page.’ Enter the location in the PLC that will contain the page number into the Remote Address field of the Comms Block. Set the Frequency field to something other than Inactive, Datapanel Address field is not used, the Number of Points field must be set to two.

Note

> Two consecutive registers in the PLCare required for proper operation of this feature. The first register contains the page number, the second register must always contain a zero.

Now, whenever the Datapanel sees a new value appear in the first register, it changes to that page number. The operator is then free to change to any other page desire; the Datapanel will not change pages again until it sees a new value appear in the register.

Chapter 10

Loading Your Datapanel

This chapter describes the hardware setup for communications between WinCfg and the Datapanel and how to use the Transfer utility. The Transfer utility is most commonly used to download your database from WinCfg to the Datapanel. You can also use it to download a protocol file or Datapanel system software, or to upload a database from the Datapanel to WinCfg.

Hardware Setup

To transfer the database to the Datapanel, the appropriate serial port (Com1 or Com2) on the WinCfg computer must be connected to the PC/PLC port on the Datapanel as shown in Figure 10-1. The download cable provided with the Datapanel must be used for this connection. After completing the download of the Datapanel, the system must be restored to the normal operating control configuration using the controller cable (not supplied with the Datapanel.) For wiring and pin assignments of the supplied download cable, refer to the Datapanel user's manual.

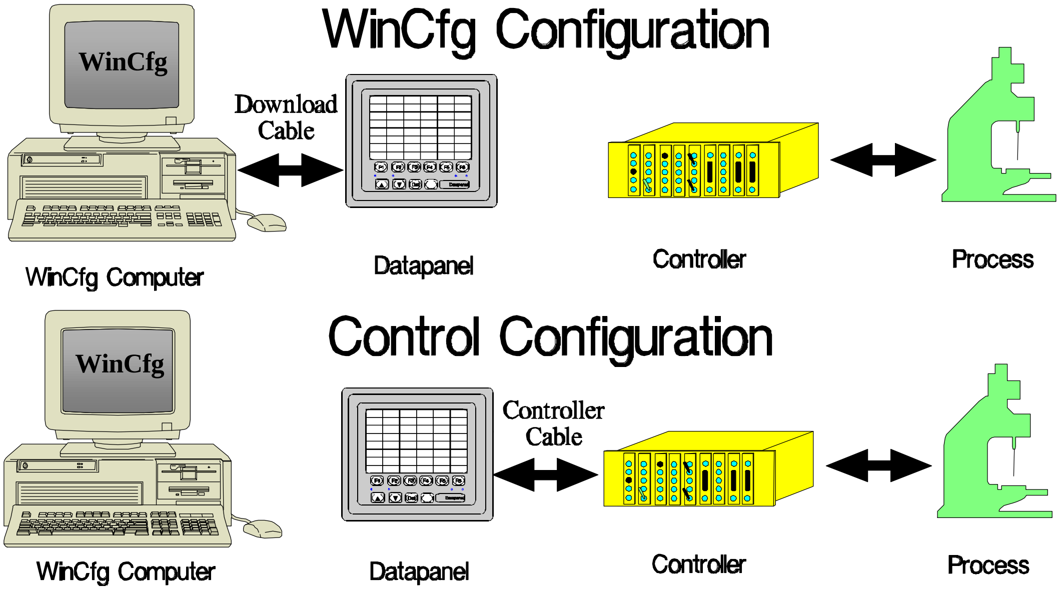

WinCfg Configuration
WinCfg
Download Cable
WinCfg Computer
Datapanel
Controller
Process
Control Configuration
WinCfg
Controller Cable
WinCfg Computer
Datapanel
Controller
Process

Figure 10-1. Datapanel Communication Configuration

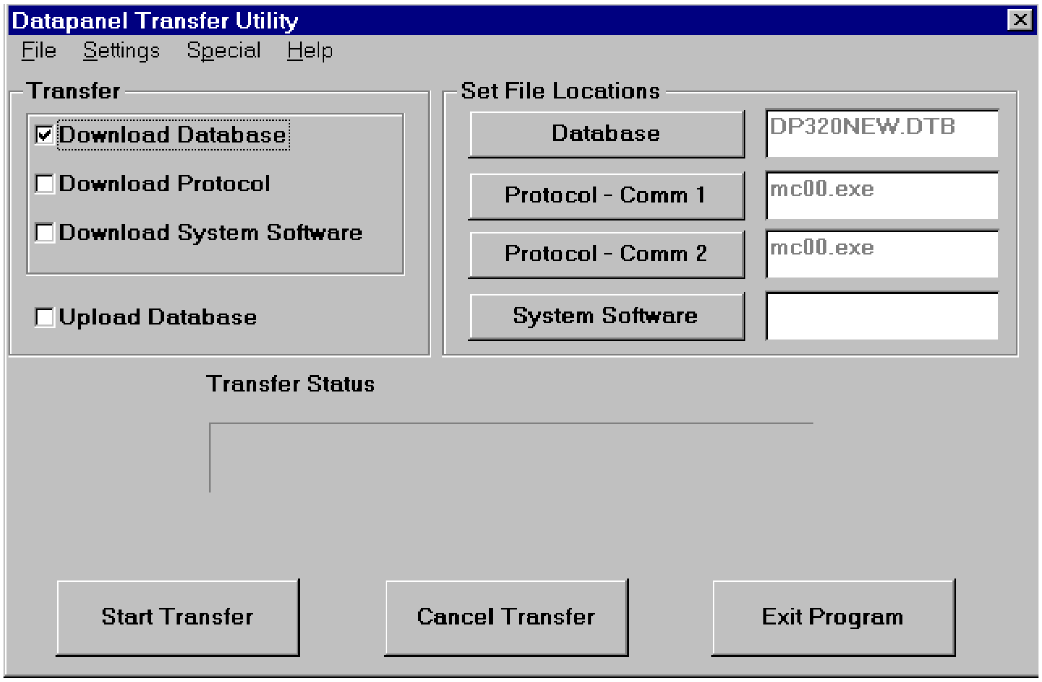
Datapanel Transfer Utility

The Transfer Utility is used to

- Download from WinCfg to the Datapanel:
  - Databases
  - Protocols
  - Datapanel System Software
- Upload from the Datapanel to WinCfg:
  - Current Datapanel Database

In order for transfers to occur, the Datapanel must be in the Host Transfer mode. Refer to the Datapanel manual for details on how to put the Datapanel in this mode.

To display the Datapanel Transfer Utility dialog box, click the Transfer Utilities button or select Transfer from the File menu.


Datapanel Transfer Utility
File
Settings
Special
Help
Transfer
Set File Locations
Database
Protocol - Comm 1
Protocol - Comm 2
System Software
Transfer Status
Start Transfer
Cancel Transfer
Exit Program

☑ Download Database

☐ Download Protocol

☐ Download System Software

☐ Upload Database

Database: DP320NEW.DTB

Protocol - Comm 1: mc00.exe

Protocol - Comm 2: mc00.exe

System Software:

Downloading a Database to the Datapanel

This is used to transfer a database design from WinCfg to the Datapanel. Make the selections for all types of download before initiating the transfer.

Database

Click the Download Database check box. The current database is selected by default. To select a different database, click the Database button to display the Select Database File dialog box. Select the drive, directory and database file (.DTB file extension).

Protocol

Click the Download Protocol check box. If you have configured protocols for the currently open database, they will be displayed in the Protocol – Comm 1 and Protocol – Comm 2 boxes. If you need to select a protocol, click the appropriate protocol button to display the Select Protocol File dialog box. Select the drive, directory, and protocol file. Protocol files have the extensions indicated below:

Model	Extension
H, COM1	.p1h
H, COM2	.p2h
320T,1060,1062,1065	.exe
150	.pcd
160, 240E, COM1	.p1e
160, 240E, COM2	.p2e
DPK, DPJ+, 240T	.pck

System Software

Normally you do not need to download Datapanel system software, unless for example, flash memory has been erased. To download Datapanel system software, click this check box. Click the System Software button to display the Select System Software File dialog box. Select the drive, directory and system software file (.exe or .cmd file extension).

Initiate the Transfer

When all selections are complete, click the Start Transfer button to initiate the transfer. The bar graph will show progress and successful completion of the transfer.

Uploading a Database from a Datapanel

This is used to transfer an existing database from a Datapanel onto the hard drive of the WinCfg computer. You can then open the .dtb file in WinCfg and modify it. The modified database can either be reloaded into the Datapanel, or save under another name for later use.

To initiate upload, click the Upload Database checkbox. Click the Start Transfer button. . The bar graph will show progress and successful completion of the transfer.

Erasing Datapanel Flash Memory

If you select Special on the Transfer Utility menu bar, the Erase Flash option is displayed. If this option is selected, the Erase Flash Now warning dialog box is displayed. If the Erase Flash option is confirmed, the Flash Memory will be erased. The system software will be lost, the current database will be lost, and any passwords will be erased. The option is provided so that if the Flash memory is corrupted, it can be erased completely and the firmware then restored by downloading the .cmd or .exe system file. The procedure is the same for all models except as shown in Table 10-1.

Click the Special option on the menu bar to display the Erase Flash Now dialog box. Click the Erase Flash checkbox to enable the erase function. To initiate the erase, click the Erase Flash Now button.

The Datapanel will display the message: **Erase via Port!**

The PC will display the message: **Sending FLASH ERASE message**

When the flash erase operation is complete, re-install the .cmd or .exe system file, the protocol and the database using the Download option.

Table 10-1. Download Parameters

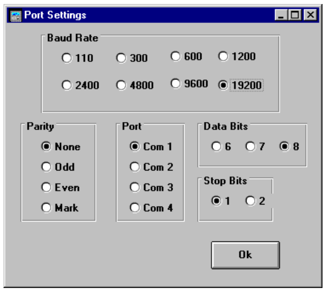
Model	H	All others
Cable Connection	Printer Port (only for erase flash procedure) *	PLC/Comms Port
Baud Rate	9600	19200
Data Bits	8	8
Stop Bits	1	1
Parity	NONE	NONE

* After the erase flash is complete on the model H, you must connect to the same port as the other models and use the same settings to download software.

Note

On some Datapanels, it may be necessary to remove power from the Datapanel momentarily after the “Erase Flash Now” message is started and then reconnect power in order to see the “Erase via Port!” message and have a successful erase.

Port Settings



Baud Rate: ○ 110 ○ 300 ○ 600 ○ 1200 ○ 2400 ○ 4800 ○ 9600 ● 19200

Parity: ● None ○ Odd ○ Even ○ Mark

Port: ● Com 1 ○ Com 2 ○ Com 3 ○ Com 4

Data Bits: ○ 6 ○ 7 ● 8

Stop Bits: ● 1 ○ 2

To view or edit port settings for the Transfer Utility, select Port from the Settings enu. The Port Settings dialog box will appear. All transfers to the Datapanel must be made at the following default settings. The single exception is the Model H when using Erase Flash Now. This must be at 9600, No Parity, 8, and 1, and into the Printer port (COM2) of the Datapanel H. It is not necessary to set the Datapanel port settings to match these settings, they will be automatically overwritten during the transfer process. Selection between Com1 and Com2 depends on which of these two ports are available on the PC containing the WinCfg software and may be changed as needed.

The default settings for the link between the PC and the Datapanel are:

- Baud Rate **-** 19200
- Parity **-** NONE
- Port **-** Com 1 or Com 2
- Data Bits – 8
- Stop Bits **-** 1

Chapter

11

Advanced Configuration

This chapter provides detailed information about configuring function keys and bitmaps on the graphic page.

Function Keys

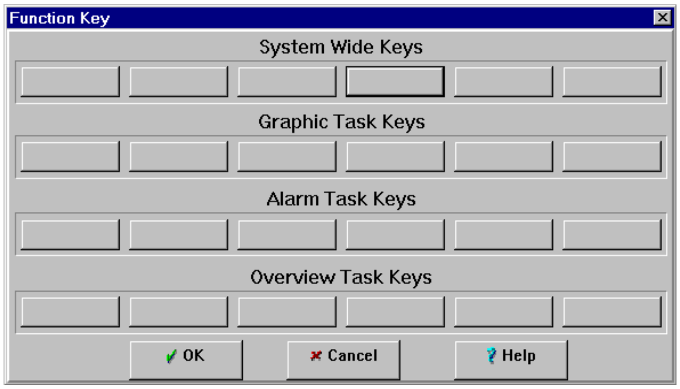
Function keys (F-keys) can be configured on a system-wide (every page), task (system screens such as Alarm or Overview), or specific page (graphics) basis The function keys configured using this dialog can be on the page the user specifies, not any specific or particular page. The operation the key is programmed to perform is configured in the same way as if it was configured on the graphics page directly.

A key that has been configured on a **system-wide basis** will have the same label and perform the same function on all pages unless

- The page type being displayed has that key assigned on a task basis
- The page being displayed has that key assigned on a specific page basis.

A key that has been configured on a **task basis** will have the same label and perform the same function on all pages of that task type unless the page being displayed has that key assigned on a specific page basis. You can configure the following types of keys.

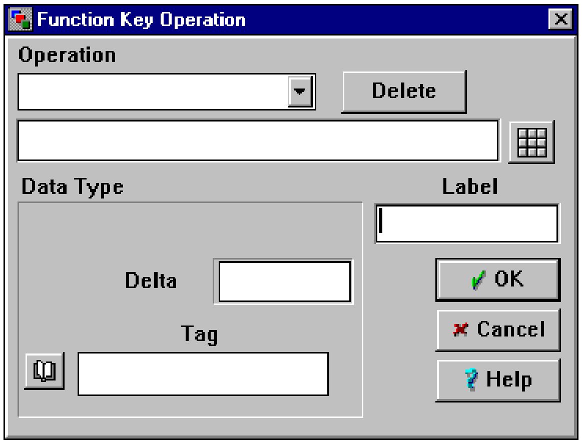
- Display Pages as Graphic Task Keys
- Alarm Log as Alarm Task Keys
- Overview Pages as Overview Task Keys
- Monitor Pages as Monitor Task Keys (Model H only)



To Configure a Key

Click the Function Keys button to access the Function Key dialog box. The dialog box has four or five rows of keys. The first row represents the function key assignments for system-wide use. The remaining rows represent the function key assignment for each of the specific tasks. The number of options and the number of keys on the dialog box depends on the model being configured, as shown in Table 11-1.

Click the button for the particular key that you wish to program on either a system-wide basis or on a task basis. The Function Key Operation dialog box will appear. A composite version of the box is shown in the illustration. Not all fields shown will appear in the initial dialog box.



- Click the arrow on the Operation field to access the drop-down list of available operations to be associated with the selected F-key:
  - Macro - causes a custom-configured operation to be performed
  - Ramp - causes the tag value to change incrementally
  - Jog - performs the function of a momentary push button.
  - Toggle - causes the tag value to toggle between two values
  - Direct Write - writes operator-entered value to the tag
  - Recipe Transfer/Load - loads preconfigured values into the associated tag, and/or transfers the current values of the recipe tags to the controller (either or both operations can be selected)

See Chapter 8 for information on configuring each of these types of functions.

Table 11-1. Function Keys and Options Available

Model	Options	Keys
H	4	8
1060/62	4	12
1065	4	24
Others	4	6

Bitmaps

Bitmaps can be displayed on all Datapanels except Models K and 150. A maximum of 300 bitmaps can be displayed depending on the amount of available memory. Bitmaps can be used in four ways:

- Static - to form a general background on a Datapanel display
- Discrete - to indicate the state of a Digital Tag
- Limit - to indicate that a limit for an Analog Tag has been violated
- List - a series of bitmaps may be configured to represent values in an analog range, e.g., pictorial representation of a dial in various pointer positions to represent pressure readings.

Bitmaps are stored in one of two directories created during installation:

- **BITMAPS** These are two-color bitmaps for use with monochrome displays. A bitmap for monochrome will be rejected if it contains a palette of more than 2 colors, even if only two or less are used.
- **BMPCOLOR** These are multi-color bitmaps for use only with color displays. A bitmap for color will be rejected if it contains a palette of more than 16 colors, even if 16 or less are used.

A library of over 120 monochrome bitmaps and over 40 color bitmaps is supplied with WinCfg and stored in the appropriate directories. The bitmaps are displayed in a scroll window when bitmap selection is invoked.

Creating Bitmaps

You can add to this library with bitmaps from other sources or you can create your own. In either case, be sure the bitmap meets the recommendations given in Table 11-2.

Table 11-2. Maximum Bitmap Size

Datapanel Model	Maximum Bitmap Size (width x height in pixels)
J+	255 x 48 (monochromatic)
H	640 x 168 (monochromatic)
240T	239 x 112 (monochromatic)
320T	(16-color)
160	239 x 48 (monochromatic)
1060/1062	(16-color)
1060/1062 Expanded Memory	(16-color)
1065	(16-color)

Overlaying Bitmaps

Some display options allow you to specify different bitmaps for each of multiple dynamic conditions, e.g., the four possible states of a digital tag or the levels of multi-level alarms. When the condition requirements are satisfied, the appropriate bitmap will be displayed. The bitmaps can be placed at different locations on the screen or they can all be placed at the same location. In this case, they are spoken of as “overlaid”, but it must be clearly understood that at no time is there more than one bitmap on the screen at any given time. If you desire a blank screen area for some condition, be sure to specify a blank bitmap for that condition. Here are two examples of how this feature might be used:

- If the four bitmaps of discrete tag were overlaid, you could cause the tag display to progressively change from OK, to ALERT, to ALARM, to DANGER, according to the values of the discrete tag.
- If the four bitmaps of discrete tag were overlaid, you could cause the tag display to progressively change to reflect the position of a 4-position rotary switch.

Sizing Bitmaps

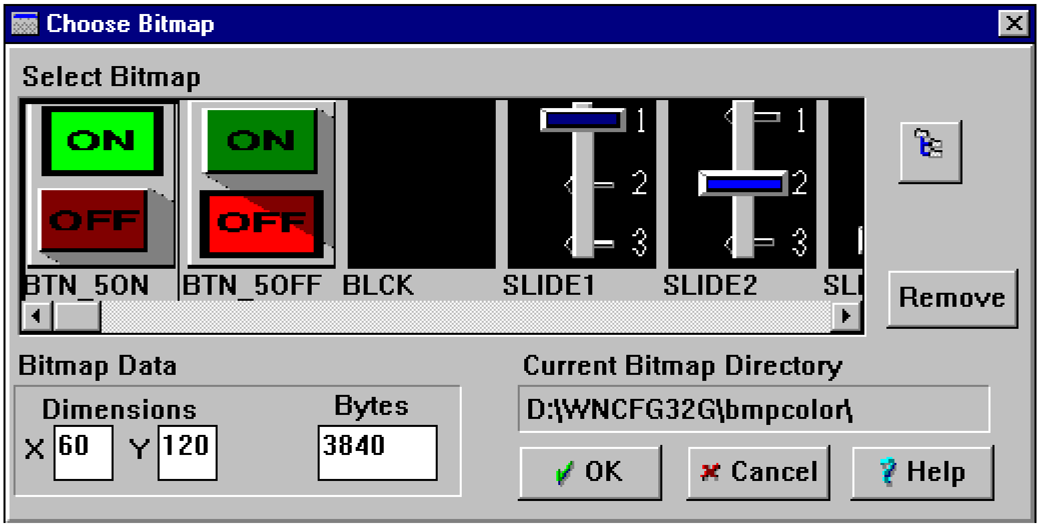
After placing a bitmap in a graphic page, the size of the bitmap can be adjusted by dragging the sizing handles. Sizing is limited to multiples of the original bitmap size in both the x and y directions.

Initiating Bitmap Placement: Bitmap Type Selection

Click the Bitmap button to initiate the bitmap placement operation. Move the mouse pointer to the location on the page where you want the lower left corner of the tag to appear. Click to access the Configure Bitmap dialog box. Click an option box on the Select Bitmap Style field to choose either Static, Discrete, Limit or List. The appearance of the dialog box changes according to the bitmap type selected. The configuration of each type is discussed below.

Bitmap Selection

Each of the four types of bitmaps use the same method of selecting the bitmap. After selecting the bitmap type to display the associated configuration dialog box, click the bitmap you want to make a selection for in order to access the Choose Bitmap dialog box. A display of the available bitmaps appears in a scrollable window. One of the selections is a bitmap with the text "NO BITMAP". If selected, the illustration will appear in the design window, but no bitmap will be displayed at run time. This is useful for conditional bitmaps, e.g., discrete, limit, and list, in which it is desired that some of the activated positions will display nothing (i.e., no bitmap) when those conditions are true.


Choose Bitmap
Select Bitmap
ON
OFF
ON
OFF
1
2
3
1
2
3
BTN_5ON
BTN_5OFF
BLCK
SLIDE1
SLIDE2
SLI
Remove
OK
Cancel
Help

Bitmap Data

Dimensions: X 60 Y 120

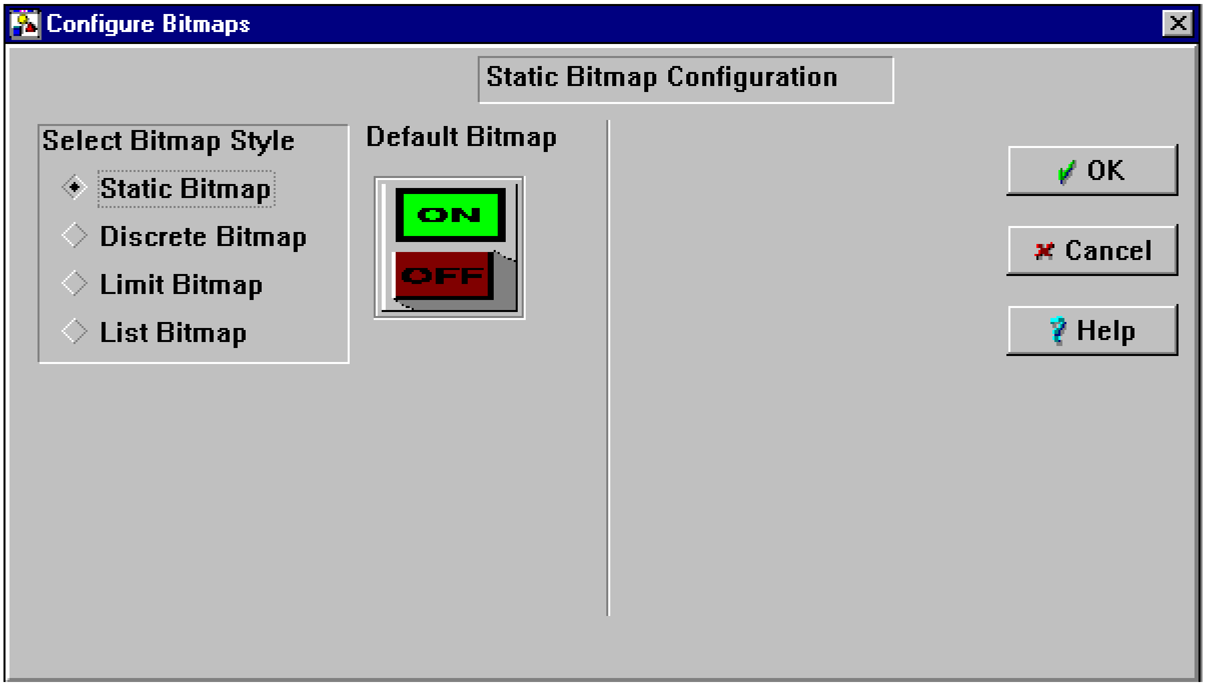
Bytes: 3840

Current Bitmap Directory: D:\WNCFG32G\bmpcolor\

The bitmaps available depend on whether the Datapanel is color or monochrome. The source directory is shown in the lower right corner. The size of the selected bitmap in pixels is shown in the lower left, along with the size in Bytes. Click on the desired bitmap and then click OK. The selected bitmap will replace the one in the configuration dialog box.

Static Bitmap

If you selected Static, the Static Bitmap Configuration form of the dialog box will appear. A static bitmap is used to form a general background on a Datapanel display much like “wallpaper” in Windows. Select the desired bitmap as described above. Click OK. The bitmap will appear on the page.


Configure Bitmaps
Static Bitmap Configuration
Default Bitmap
ON
OFF
OK
Cancel
Help

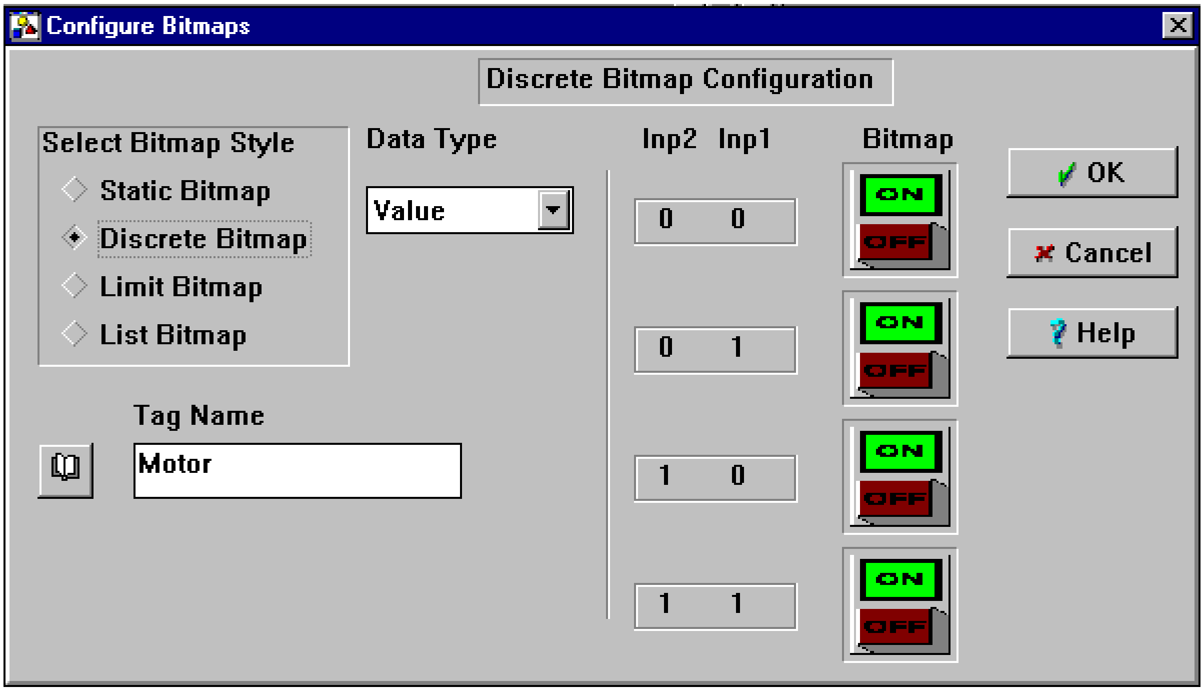
Select Bitmap Style
- ● Static Bitmap
- ○ Discrete Bitmap
- ○ Limit Bitmap
- ○ List Bitmap

Discrete Bitmap

If you selected Discrete, the Discrete Bitmap Configuration form of the dialog box will appear. You can select a bitmap for each of the digital conditions.

- Specify the tag.
- Select Value, Alarm, or Unack from the drop-down Data Type list according to what you want to control the bitmap display.
- Select the desired bitmap for each of the conditions for which you want a bitmap displayed.
- Click OK.

The tag will appear on the page in the location previously selected.



Configure Bitmaps

Discrete Bitmap Configuration

Select Bitmap Style

○ Static Bitmap
● Discrete Bitmap
○ Limit Bitmap
○ List Bitmap

Data Type
Value

Tag Name
Motor

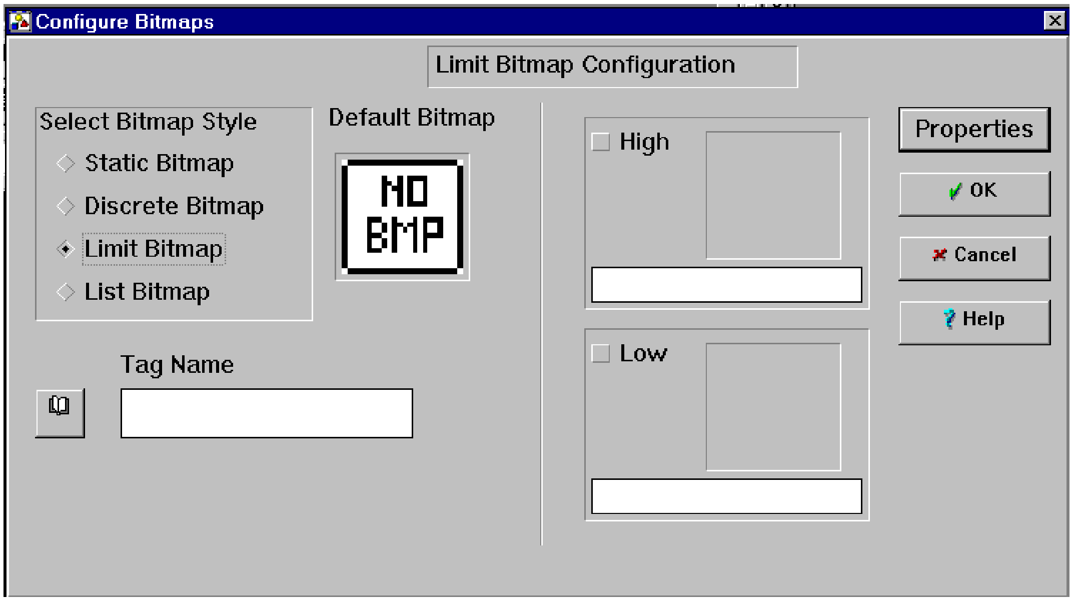
Inp2	Inp1	Bitmap
0	0	ON OFF
0	1	ON OFF
1	0	ON OFF
1	1	ON OFF

Limit Bitmap

If you selected Limit, the Limit Bitmap Configuration form of the dialog box will appear. You can select a bitmap for each of the limit conditions and bitmap for the normal (default) condition.

- Specify the tag.
- Click the checkboxes for Low and/or High depending on which limits you want displayed.
- Select the desired bitmaps.
- Click OK

The tag will appear on the page in the location previously selected.

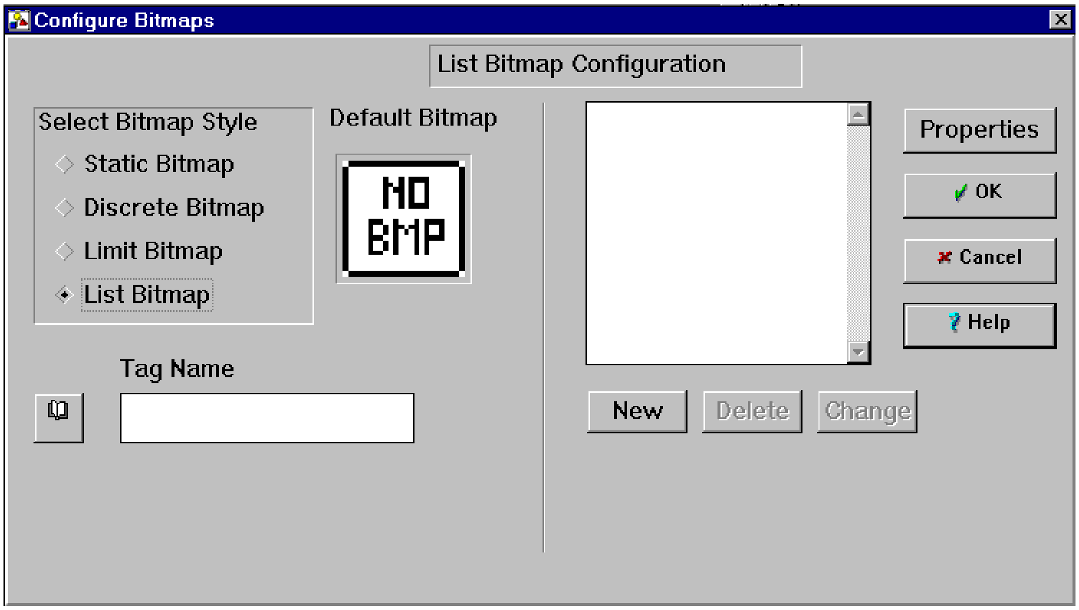

Configure Bitmaps
Limit Bitmap Configuration
Select Bitmap Style
○ Static Bitmap
○ Discrete Bitmap
● Limit Bitmap
○ List Bitmap
Default Bitmap
NO BMP
Tag Name
☐ High
☐ Low
Properties
OK
Cancel
Help

List Bitmap

If you selected List, the List Bitmap Configuration form of the dialog box will appear. You can select a bitmap for a number of values and must select a bitmap for the normal (default) condition. If none of the assigned values have been achieved, the default bitmap will be displayed. When the value of the tag increases to the first assigned value, the bitmap associated with that value will appear. When the value of the tag increases to the next assigned value, the first bitmap will be removed and the second one displayed. When the value of the tag falls below the second assigned value, the second bitmap will be removed and the first one displayed. When the value of the tag falls below the first assigned value, the first bitmap will be removed and the default bitmap will be displayed. Thus, the bitmap displayed is related to the value of the tag. As an example of how this function might be used, multiple bitmaps could be overlaid to simulate the appearance of a pressure dial with a needle position reflecting the current pressure reading. To create a list:

- Specify the tag. The tag must be analog.
- To add a value to the list, type a value in the field. The typed value must be compatible with the characteristics of the tag.
- Select a bitmap to be displayed for this value.
- To remove a value from the list, highlight the value to be removed, click the Delete button.
- Click OK

The tag will appear on the page in the location previously selected.


Configure Bitmaps
List Bitmap Configuration
Select Bitmap Style
◇ Static Bitmap
◇ Discrete Bitmap
◇ Limit Bitmap
◆ List Bitmap
Default Bitmap
NO BMP
Tag Name
Properties
OK
Cancel
Help
New
Delete
Change

Managing Bitmaps

When configuring a database, it is important to have a clear understanding of the distinction between bitmaps in the database and those in the bitmap directory.

Bitmap Directories

A collection of bitmaps is supplied with WinCfg. They are stored in one of two directories created during installation: BITMAPS (2-color bitmaps for use with monochrome displays) and BMPCOLOR (16-color bitmaps for use with color displays or 16-gray monochrome displays). The contents of the applicable directory will be displayed in a scroll window when bitmap selection is invoked. A maximum of 300 bitmaps can be displayed depending on the amount of available memory.

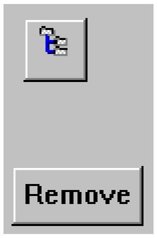
Bitmaps can be added to the directories or deleted from the directories at will. Thus, you can create your own custom collection of bitmaps. Bitmaps will be rejected if:

- A bitmap for monochrome contains a palette of more than 2 colors, even if only two or less are used.
- A bitmap for color contains a palette of more than 16 colors, even if only 16 or less are used.

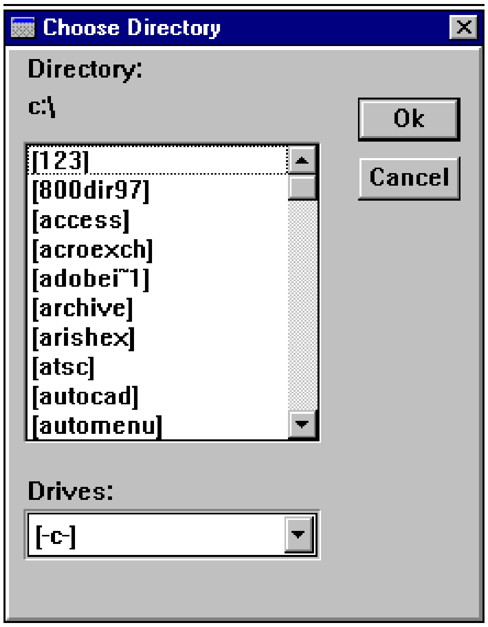
Bitmaps in the Database

In addition to the bitmaps in the directory, you can use bitmaps which are obtained from other sources. For instance, if you created your database by modifying one of the sample databases supplied with WinCfg, your bitmap list may contain bitmaps added to the database by the creator of the sample. These bitmaps are not copied to the two WinCfg directories, rather, they are stored within the database. You can add bitmaps to your bitmap list without necessarily adding them to your database. You do this by linking directories to your bitmap list. When you invoke bitmap selection, the scroll window will show not only the contents of the applicable WinCfg directory, but also the contents of whatever directories you have linked to the database. This enables you to use bitmaps from other sources without having to copy them into the WinCfg directories.

You can perform these functions with the Bitmap Management buttons. These buttons can add a bitmap directory to the bitmap list or delete an existing bitmap from the database. Deleting a bitmap from the database does not remove it from either the WinCfg bitmap directory or the user directory. This function allows you to customize the database bitmap list for your particular database. You can add and delete bitmaps to/from the database without exiting the active window.



- **Adding a bitmap directory to the scroll list.** Click the directory button. A window will appear which will allow you to navigate to the desired directory. Select the directory and click OK. ALL the bitmaps in that directory will be added to the database bitmap list. You may delete any unneeded ones using the process described below.


Choose Directory
Directory:
c:\
[123]
[800dir97]
[access]
[acroexch]
[adobei~1]
[archive]
[arishex]
[atsc]
[autocad]
[automenu]
Drives:
[-c-]
Ok
Cancel

- **Adding a bitmap to the database.** From the bitmap scroll list, click on the bitmap you want to use. Click OK. The bitmap is now part of your database.
- **Removing a bitmap.** In the bitmap list, select the bitmap to be deleted from the database and the scroll list. Click the Remove button.

Chapter

12

Troubleshooting and Common Setup Problems

Frequently Asked Questions

How do I get started?

From the File menu, select Open. Enter the name of the new Database you want to create in the highlighted Active Database box. Click OK. A Message will appear saying, “Database does not exist. Would you like to create it?” Select Yes. You will then be able to select the proper Datapanel model such as the 240T.

Next you will select a protocol, configure your Tags, and then configure your Graphic Page with display objects.

This operation is discussed in Chapter 4, “Setting up the Datapanel Database.”

Now that I’ve created my database, how do I transfer it to the Datapanel?

Go to FILE, TRANSFER. A Transfer Utility dialogue box will appear. Put an ‘X’ next to “Download Database” and “Download Protocol.” Connect the cable supplied with your Datapanel between COM1 on your PC and the 25 pin port on the Datapanel. If you are using a port other than COM1 on your PC, you must go to SETTINGS, PORT and specify the correct COM port. The Datapanel must be in the Host Transfer mode before you can download to it. You will see “Press F1 to Abort” on the screen when you are in this mode. You are now ready to Transfer. Select Start Transfer.

This operation is discussed in Chapter 10, “Loading Your Datapanel.”

What is the difference between the two rows of function keys on the function key Macro Keypad?

The upper row of keys, all of which are icons, represent the original function of the key. The lower row (F1, F2, etc.) represents keys that you have redefined. For example, if you had a page on your Datapanel screen and you wanted to redefine function key F5 to go to page 10, you would double-click function key F5, select Macro, select the macro keypad, enter 10 and enter a carriage return. The key is now redefined to go to page 10 when pressed. Suppose now that you wanted to program another key on the same page to execute a drive out and then go to page 10. You would double-click on the function key, select macro, select the macro keypad, press the ‘Drive Out’ icon, enter the drive out point number, such as 01, then a carriage return, then the value you want driven out, three more carriage returns, *then* you would press *F5*, (this is the key that was previously redefined to go to page 10). This will save you from having to enter keystrokes that were already entered and save you some time.

This operation is discussed in Section 8, Configuring Operator Input to the Controller or Datapanel.

Common Problems

Why won’t my database transfer to the Datapanel?

Make sure you are using the cable supplied with your Datapanel between the Datapanel and your PC. If you are using something other than COM1 on your PC, you will need to go into the Transfer Utility under Settings, Port and change the port setting. Check the port parameters in the port settings area of the Transfer Utility.

Settings *must always* be 19,200, 8, 1, None or the Transfer will not work. Make sure you are on the 25 pin port on the Datapanel and that the Datapanel is in the Host Transfer Mode.

This operation is discussed in Chapter 10, “Loading Your Datapanel.”

Why won’t the configuration of my Datapanel toggle a bit in my PLC on and off? I’ve checked everything and it looks correct, but still it is not working properly.

Make sure you configured the Tag to read this bit from your PLC. A Toggle requires not only a Write, but a Read address as well in order to work.

This operation is discussed in Chapter 8, “Configuring Operator Input.”

Why won’t my Read Data and Display Text Page comms block work?

In order for this to work, you *must* read *two consecutive* registers in the PLC. The first register will contain the page number and the second register *must always contain a zero* or this will not work.

This operation is discussed in Chapter 11, “Advanced Configuration.”

Checklist for Download Failure

If you experience a failure during a download function using the Transfer Utility, check the following items:

Check port settings

From the main toolbar in WinCfg, select File/Transfer. From within the Datapanel Transfer Utility dialog box, select Settings/Port. Make sure that Baud Rate is set to 19,200, Parity is set to None, Data Bits is set to 8, and Stop Bits is set to 1. No other settings will work for a download. Set Port to whichever com port you want to download through on your PC.

Make sure that you are downloading the correct files

1. In the Datapanel Transfer Utility box, make sure the correct database filename appears in the Database window under Set File Locations. This section should contain the name of your database and have a "dtb" filename extension added to it. Make sure your database was created for the Datapanel model to which you are attempting to download.
2. If you are downloading a protocol, make sure it is the same protocol your database was configured to use. For example, if you created a database for a Datapanel 160 to communicate serially to a Series 90 PLC, you would have specified protocol 68 in your database and the correct file to download would be 68.p1e.

Note

> If you start WinCfg and then Open the database you plan to download before attempting to download the database, WinCfg will automatically have the correct files selected when it comes time to download. Select File/Transfer and you will see the proper files in the Set File Locations section of the Transfer Utility box.

3. If you are trying to download system software (not required in most instances), make sure the proper filename appears in the Set File Locations section of the Transfer Utility box. Click on the System Software button and select the proper file from the list. Filenames beginning with the letter "g" are for German language system software. English versions begin with the letter "v" for version, followed by the version number, such as 330, followed by the Datapanel model designator. For example, the model designator for a Datapanel 150 would be 150, 24e for a 240E, 320 for a 320T and m00 for a Datapanel 1000 series display. The 320T and 1000 series have "exe" as a filename extension; all others use "cmd."
4. After verifying the correct system file is being downloaded, connect the cable to the Datapanel, place the Datapanel in Transfer mode, and click on "Start Transfer."
5. If download of system file still fails, perform an erase flash procedure for your model display and try loading the system file again.

Never download files that are contained on a floppy disk

Move any floppy disk files to your PC's hard drive first, then download them. Access time for floppy drives is slow enough to allow the Transfer utility to time out before the download is complete, resulting in a failed download.

Make sure the Datapanel is in Host Transfer mode

Always make sure the Datapanel is in Host Transfer mode before you attempt any file downloading.

Make sure you are using the download cable supplied with your Datapanel

Every Datapanel is shipped with a manufacturer-supplied download cable. This is the cable that must be used when downloading files.

Make sure you are connected to Com1 on the Datapanel

Make sure the download cable is plugged into the Com1 port on the Datapanel.

Make sure you are connected to the correct PC Com port

Know which Com port you are connected to on your PC and make sure it is selected in the Transfer Utility box.

Make sure no other devices are using the same port

Make sure no other devices on your PC are trying to use the same port, such as a modem, IR port, etc. Sometimes two different Com ports such as Com1and Com3 share the same IRQ; a device using Com3 can cause problems with a download on Com1.

Try to download a demo database

Try to download a demo database such as “DP160” (for a Datapanel 160), and see if it will load successfully. If it does, there may be a problem with your database or with the protocol or system file you are attempting to download.

As a last resort, erase flash and reload

If all else fails, perform an erase flash procedure for your model, then reload the system software. Then try reloading your database again.

Call for Technical Support

If problems still persist, call 1-800-GE-Fanuc and ask for Cimplicity Technical Support.

Chapter 13

Technical Data

System Tables

The following tables list System Registers and Bits. Each Register contains a 16 bit value in the range -32 768 to +32 767 or 0 to 65 535. Entries marked with an asterisk are Read Only.

Table 13-1. System Register Table

Register		
K, J+, 240T, 240E, H, 150, 160	**320T, 1000 series**	**Description**
R01 - R449	R001 - R1000	User Configurable
R450	R1450	Inter Comms Block Delay Retries
R451 - R490		User Configurable
		DATE AND TIME REGISTERS
R491	R1002	Year 0 – 99
R492	R1003	Month 1 – 12
R493	R1004	Day 1 – 31
R494	R1005	Hour 0 – 23
R495	R1006	Minute 0 – 59
R496	R1007	Second 0 – 59
		ERROR STATUS REGISTERS
R497 *	R1008*	Last system error detected
R498 *	R1009*	Number of system errors detected to date
R499 *	R1010*	Last communications error detected
R500 *	R1011*	Number of communications errors detected to date
R501	R1012	Set to Number of Current Page
Value:	Value:	Values have meaning as follows:
000	000	Mode Menu, Off-line and Logo
001-100	001-999	Pages
101-105		Overview - upper level
201-300		Overview - lower level
400	4000	Alarm Log
500		Monitor Mode
	R1450	Inter Comms Bock Delay Retries
R502 - R550		Reserved for System Use

*** = Read Only**

Table 13-2. System Bit Table

Bit No.		
K, J+, 240T, H	**320T & 1000**	**Description**
B0001 through B0898	B0001 through B1999	User configurable bits
B0900	B2000	Global Alarm bit
B0901 through B1000	2001 through 2201	Demand bits, reserved for Comms Blocks: **K, J+, 240T, 240E,** **150, 160, & H** **320T & 1000** 901 1 2001 1 | | | | 1000 100 2201 200

Registers and Bits

Datapanel Register Table

Raw analog variables can be stored in the Register Table. Up to 550 registers are available in Models K, J+, 240T, 240E, 150, 160 and H. They are referenced as R001 to R550. Models 320T and 1000 have 1000 Registers available, referenced as R001 to R1000. Each Register contains a 16 bit value in the range -32768 to + 32767 or 0 to 65535 inclusive. Registers can be used in pairs to contain a signed 32 bit integer, unsigned 32 bit integer, or 32 bit IEEE floating point.

Registers R001 to R490 (R0001 to R1000 on Model 320T)

Available for configuration by the user.

Register R450 (R1450 on Model 320T)

This register sets the delay period between Comms Block retries. The register value does not represent an absolute time period. The time delay is proportional and is dependent on system loading.

Registers R491 to R496 (R1001 to R1007 on Model 320T)

Real Time Clock Registers. These registers are updated by the system software.

Registers R497 to R498 (R1008 to R1009 on Models 320T and 1000)

Standard Error Codes. Register 497 contains the last standard error detected and Register 498 contains the number of system error messages to-date.

Registers R499 to R500 (R1010 to R1011 on Models 320T and 1000)

Comms Error Codes Registers. Register 499 contains the last error message detected and register 500 contains the number of the comms errors to-date.

Register R501 (R1001 on Models 320T and 1000)

This Register is set to the number of the current page as follows:

320T & 1000	All Others	Page
0000	000	Mode Menu, Off-line and Logo
0001-0999	001-100	Pages
	101-105	Overview upper level
	201-300	Overview lower level
4000	400	Alarm Log
	500	Monitor Mode

Registers R503 to R550

These registers are reserved for System use on the Model H.

Datapanel Bit Table

Raw Digital values are stored in the Bit Table. Up to 1000 bits can be stored in Models K, J+, 240T, 240E, 150, 160, and H are referenced as B0001 to B1000 . Models 320T & 1000 can store 2201 Bits, referenced B0001 to B2201.

Although bits B901 to B1000 (B2001 to B2201 on Models 320T & 1000) can be used, this should be done with caution as they are related to Demand Comms Blocks (refer to Demand Bits on next page). When these bits are set, they are immediately reset to 0.

The remaining System Registers and Bits may be read from and written to. They should be configured with caution and by an experienced user.

Bits B0001 to B0898 (B0001 to B1999 on Models 320T& 1000)

User Configurable.

Bit B0900 (B2000 on Models 320T & 1000)

Global Alarm Bit.

Bits B0901 to B1000 (B2001 to B2201 on Models 320T & 1000)

Demand Bits. These bits are reserved and operate as trigger bits for comms blocks in the range of 1 to 100 (1 to 200 on Models 320T & 1000). When these bits are set, whether by input from the controller or by Operator Drive Out, the corresponding comms block is activated immediately, once only and independently of the current comms block operation.

A Demand Comms Block is given priority over currently executing comms blocks, the normal frequency of which is not affected. Using a Demand Comms Block, a controller can initiate communications to another controller, for instance.

Error Codes

Communications Error Codes

101 Timeout

102 Checksum Received Error

103 Bad Character Received Format Error

104 Bad Message Framing Error

105 Bad Message Format Received

106 NAK Response Received

107 Comms Block Format Error

108 Invalid Command

System Error Codes

28 More than 64 comms blocks activated at the same frequency.

29 More than 8 Page activated comms blocks activated by the Text Page.

120 Tag Conversion error - unreasonable limits configured in an Analog Tag Record.

121 No Comms File.

122 No Comms Blocks.

123 Invalid Comms Block Time base.

124 Invalid Comms Block Type.

Controller Errors

If any errors are displayed which are not listed in the above tables, reference should be made to the controller text file for information.

Host Comms for J+ and 240T Datapanels

Note

This functionality is available only on DPJ+ and DP240T Datapanel models,

Host Comms Protocol

This protocol must be used in Datapanel #2 when connected for communications with another Datapanel.

Modicon Slave (Protocol 80)

Four types of data can be transferred from a Modicon PLC to the Datapanel OI system:

Coils
Inputs
Holding registers
Input registers

Holding Registers are assumed to hold 16 bit values, linear or non-linear. All scaling is done within the OI System Analog Tags.

Configuration Information

The format of the Remote Address field, is as follows:

NNNMMAAAAA

Where:

NNN	3 decimal digit PLC number (some early versions of Datapanel OI systems only allow two digits)
MM	CL for coils IN for inputs HR for holding registers IR for input registers
AAAAA	5 decimal digit address, interpreted as a count rather than absolute address.

For example, the Remote Address for the 15th Coil in PLC number 5 would be:

005CL00015

Note

A PLC number of 000 is not allowed since Modbus interprets this as a broadcast to all PLCs with no resulting response.

Communication Parameters

The recommended data communication parameters are:

Baud Rate	9600
Character Bits	8
Start/stop Bits	1
Parity	NONE

A

Advanced protocol settings, 4-11
Alarm type definitions, 5-5
Alarms
  configuring, 5-5
  enabling, 4-15
Analog and discrete data
  overview, 2-3
Analog tags
  adding to the page, 7-5
  configuring, 5-2
Arrow Key, 4-17

B

Backlight
  enabling, 4-15
Bitmaps
  adding to the page, 7-7
  creating, 11-3
  overlaying, 11-4
Browsers
  Graphic pages, 6-6
  message table, 5-10
  overview group, 5-8
  Tag, 6-7

C

Checklist for Download Failure, 12-2
Circles
  adding to a page, 7-15
Clock communications
  configuring, 9-5
  described, 9-4
Color
  for type of tag, 6-13
Color, dynamic
  configuring, 6-13
Common dialog boxes, 6-6
Common problems, 12-2
Communications blocks
  described, 9-6
  executing on demand, 9-11
  structure, 9-6
  types, 9-9
Communications error codes, 13-6
Configurable object attributes, 6-12
Configuration
  Datapanel
    overview, 2-4
  Host Comms communication, 13-7
Configure menu, 3-6
Configuring
  alarms, 5-5
  analog tags, 5-2
  clock communications, 9-5
  data description, 5-3
  database parameters, 4-9
  digital tags, 5-7
  embedded function keys, 8-2
  I/O, 5-4
  message tables, 5-10
  output options, 8-11
  overview groups, 5-8
  Recipe groups, 5-9
  scaling, 5-5
  system settings, 4-15
Configuring a Communications Block
  described, 9-8
Configuring drive out (Operator write), 8-6
Configuring passwords, 4-14
Controller errors, 13-6
Copying a page, 6-20
Creating
  Database, 4-1
Customization, 4-17
Cut, Copy, and Paste
  Graphic pages, 6-19
  objects, 6-5

D

Data Description
  configuring, 5-3
Data flow
  overview, 2-2
Database
  creating, 4-1
  deleting, 1-2
  deleting, 4-1
Database names, 4-3
Database parameters
  configuring, 4-9
Datapanel bit table, 13-4
Datapanel Com 1 Port, 9-2
Datapanel Com2, 9-3
Datapanel register table, 13-3
Datapanel Tags option, 4-16
Datapanels
  overview, 2-1
Deleting
  a database, 1-2
Deleting a database, 4-1
Demand comms blocks, 9-11
Demand Comms Blocks, 9-11
Dialog boxes, common
  Graphic Browser, 6-6
  Tag Browser, 6-7
Digital tags
  adding to the page, 7-6
  configuring, 5-7

Direct write
  configuring, 8-13
Direction, 6-9
Display, 4-15
Display characteristics
  selecting, 4-15
Download, 10-3
  troubleshooting checklist, 12-2
Download parameters
  for Datapanel models, 10-4
Drive out
  described, 8-1
Drive out (operator write)
  configuring, 8-6
Dynamic display, 6-11
  list of configurable attributes, 6-12

E

Edit menu, 3-4
Editing existing objects, 6-5
Embedded communications blocks, 9-10
Embedded function keys
  configuring, 8-2
  described, 8-1
Erasing Datapanel flash memory, 10-4
Error codes, 13-6
Examples
  dynamic display, 6-18
  width and offset, 6-9
Executing Comms Blocks on demand, 9-11

F

FAQs, 12-1
Fields
  of a tag, 6-11
File menu, 3-4
File structure, 3-2
Flash memory
  erasing, 10-4
Frames
  adding to a page, 7-15
Frequently asked questions, 12-1
Function keys, 11-1

G

Graphic Browser, 6-6
Graphic pages
  cutting, copying, and pasting, 6-19
Graphics
  grouping, 7-16
Graphics grid, 7-17
Graphics Page Design window, 6-2
Grid
  graphics, 7-17
Grouping graphics, 7-16

H

Hardware
  setup, 10-1
Height, 6-9
Help menu, 3-7
Host Comms communications protocol, 13-7
Host communications, 9-3
Host/Slave Communications
  configuring, 9-13

I

I/O
  configuring, 5-4
Importing a database, 4-6
Installing
  WinCfg software, 3-1
Installing WinCfg software
  Quick Start, 1-1

J

Jog function
  configuring, 8-12

L

Lines
  adding to the page, 7-12

M

Main window, 3-3
  menu bar, 3-4
Menu Bar
  main window, 3-4
Menus
  Configure, 3-6
  Edit, 3-4
  File, 3-4
  Help, 3-7
  Port Selection, 3-7
  Window, 3-7
Message tables
  creating, 7-3
Message Tables
  configuring, 5-10
Messages
  adding to the page, 7-2
Meter

  - adding to the page, 7-14
- Moving objects, 6-5
- Multicomms, 9-1
- Multidrop, 9-2
  - configuring, 4-12

O

- Object functions, 6-5
- Offset, 6-9
- Online documentation, 1-1
- Open Database, 4-3
- Open DTB File, 4-4
- Operations
  - output, 8-2
- Operator customization, 4-17
- Operator write. *See* Drive out
- Output operations, 8-2
- Output options
  - configuring, 8-11
- Overlaying bitmaps, 11-4
- Overview groups
  - configuring, 5-8

P

- Page Change Operation, 9-13
- Page changes
  - configuring, 4-15
- Passwords
  - configuring, 4-14
- Pasting a page, 6-20
- Pop-up menu, 6-4
- Port Selection menu, 3-7
- Port settings, 9-2
- Ports
  - Datapanel Com2, 9-3
  - Datapanel Communications, 9-2
- Preferences, 4-8
- Problems
  - common, 12-2
- Protocols, 4-9
  - Host Comms, 13-7
- Push Button
  - adding to the page, 8-4
- Push buttons
  - described, 8-1

Q

- Quick Start, 1-1

R

- Ramp function
  - configuring, 8-11
- Raw data
  - scaling, 2-3
- Read Clock Communications
  - described, 9-4
- Recipe Groups
  - configuring, 5-9
- Rectangles
  - adding to a page, 7-15
- Registers and bits, 13-3
- Remote Address wizard, 5-2
- Right mouse button menu, 6-4

S

- Scaling
  - configuring, 5-5
- Scaling of raw data
  - overview, 2-3
- Screen activated communications, 9-10
- Selecting objects, 6-5
- Settings, 10-5
- Shapes, irregular
  - adding to the page, 7-12
- Sizing objects, 6-5
- Starting
  - WinCfg software, 3-3
- Starting WinCfg
  - Quick Start, 1-1
- Status LED, 4-16
- Status LED operation
  - configuring, 4-15
- System, 4-16
- System error codes, 13-6
- System settings
  - configuring, 4-15
- System tables, 13-1

T

- Tag Browser, 6-7
- Tags
  - overview, 5-1
- Templates
  - using, 7-16
- Text objects
  - adding to the page, 7-1
- Toggle function
  - configuring, 8-12
- Touch Region
  - adding to the page, 8-3
- Touch regions

  described, 8-1
Transfer, 10-2
Transferring
  a database from the Datapanel, 4-5
Trend chart
  adding to the page, 7-11
Trend records
  adding to the page, 7-8

U

Uploading a database, 4-5
Uploading a database from a Datapanel, 10-4
Using online documentation, 1-1
Using templates, 7-16
Using the right mouse button, 6-4
Using WinCfg to configure a Datapanel
  quickstart, 1-2

W

Width, 6-9
Width and Offset, 6-9
WinCfg software, 3-3
  installing, 3-1
  main window, 3-3
  overview, 2-1
Window menu, 3-7
Write Clock Communications.
  described, 9-4