1

OP-1224 Pushbutton Panel

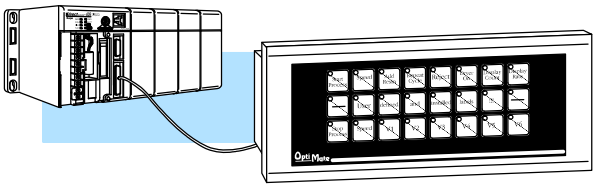
In This Manual. . . .

- Getting Started
- Preparing the Pushbutton Labels
- Installing the Panel
- Configuring the Panel
- Applying Ladder Logic

Getting Started

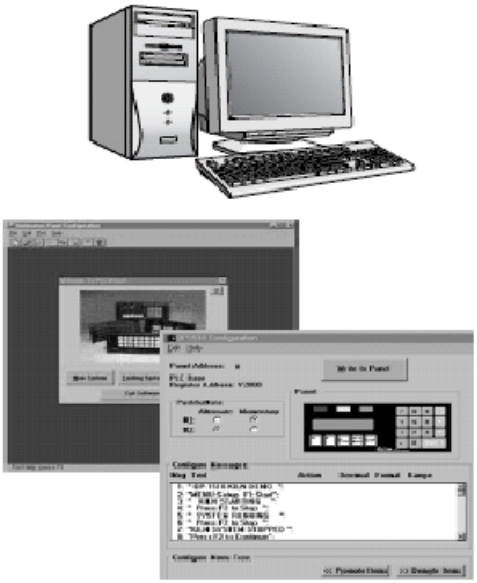
The Purpose of this Manual

This manual shows you how to install and operate your OP-1224 Pushbutton Panel. It includes wiring diagrams and power requirements, as well as the information you need for selecting the proper connecting cables.



Configuration Software

All OptiMate panels are configured using the OptiMate OP-WINEDIT configuration software.
OP-WINEDIT software is compatible with computers running Windows 95/98/2000/NT/XP.
OP-WINEDIT is ordered as a separate item from the OptiMate panel from AutomationDirect.
The software is loaded onto your personal computer and simple follow the setup instructions in the supplied user manual and the built-in HELP screens. The software allows setup of your complete application, including the type of PLC being used.
Note that OP-WINEDIT is also used to configure the OP-9001, Communications Master panel. The software can be used with Allen-Bradley PLCs.



Additional Manuals

There are several other manuals you will find helpful or necessary:

- Respective PLC User Manuals–Shows you the memory conventions, programming instruction sets, data or file types, communications protocol, etc.
- ***Direct***SOFT™ **Programmers Software Users Manual**–Shows you how to use the ***Direct***SOFT Windows software to write your ladder logic for ***Direct***LOGIC programmable controllers.
- OP-9001-M Communications Master User Manual provides details of how to use the OP-9001 for connecting multiple OP-Panels to a single CPU.

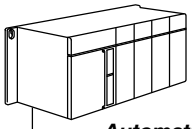
Technical Assistance

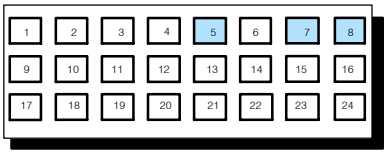
After completely reading this manual, and you are not successful with implementing the OP-1224, you may call AutomationDirect, 770-889-2858, Monday through Friday from 9:00 A.M. to 6:00 P.M. Eastern Standard Time. Our technical support group will work with you in answering your application questions. If you have a comment or question about our products, services, or manuals which we provide, please fill out and return the suggestions card included with this manual.

How the OP-1224 Works

To link the pushbuttons and the LEDs to your PLC, the OP-1224 uses a process called “memory mapping”. This process ties the pushbuttons and LEDs to specific reserved areas of memory in the PLC. You can use any available memory as long as it is consecutive.

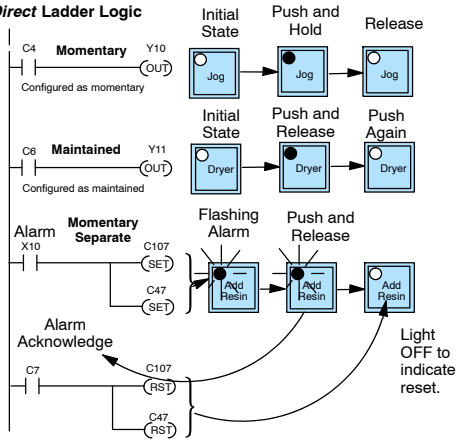
The base register addresses are entered during initial configuration using the OP-WINEDIT software. Each of the functions for the pushbuttons and LEDs are controlled by the status of their assigned bits within the memory words that you have reserved. You interface these words of memory through ladder logic. The logic below shows how the various features of the OP-1224 can be used. This will be explained in more detail later.



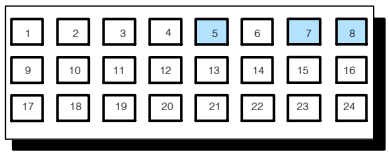


Mapped Memory Location	Function
m (such as V40600) C0-C17	Pushbuttons 1-16 ON/OFF
m+1 (such as V40601) C20-C37	Pushbuttons 17-24 ON/OFF
m+2 (such as V40602) C40-C57	LEDs 1-16 flash
m+3 (such as V40603) C60-C77	LEDs 17-24 flash
m+4 (such as V40604) C100-C117	LEDs 1-16 ON/OFF
m+5 (such as V40605) C120-C137	LEDs 17-24 ON/OFF
m+6 (such as V40606) C140-C157	Force Function Data (1-16)
m+7 (such as V40607) C160-C177	Force Function Mode/Data (17-24)

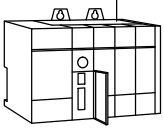
Automation*Direct* Ladder Logic Example



Notice that Pushbuttons 5, 7 and 8 are used in this example. These are controlled by internal relays C4, C6, and C7. Your configuration software (OP-WINEDIT) allows you to operate your pushbuttons as either momentary switches or ”maintained” alternate action switches. We have made C4 a momentary switch and C6 is a maintained switch. C7 is a momentary switch but we are controlling the separate ON/OFF and flashing of Pushbutton 8 with C47 and C107 respectively.

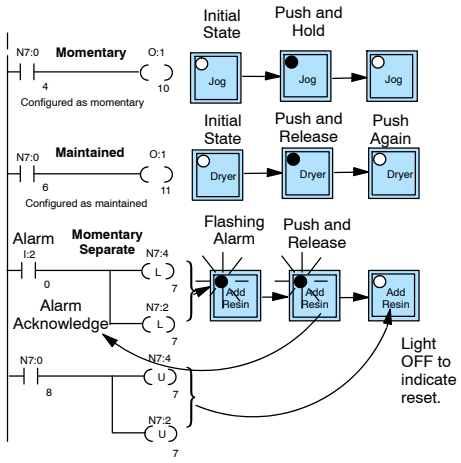


Allen-Bradley



Mapped Memory Location	Function
m (such as N7: 0/0– 0/15)	Pushbuttons 1-16 ON/OFF
m+1 (such as N7: 1/0 1/15)	Pushbuttons 17-24 ON/OFF
m+2 (such as N7: 2/0 2/15)	LEDs 1-16 flash
m+3 (such as N7: 3/0 3/15)	LEDs 17-24 flash
m+4 (such as N7: 4/0 4/15)	LEDs 1-16 ON/OFF
m+5 (such as N7: 5/0 5/15)	LEDs 17-24 ON/OFF
m+6 (such as N7: 6/0 6/15)	Force Function Data (1-16)
m+7 (such as N7: 7/0 7/15)	Force Function Mode/Data (17-24)

Allen-Bradley Ladder Logic Example

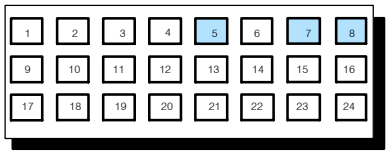


Notice that Pushbuttons 5, 7 and 8 are used in this example. These are controlled by bits 4, 6 and 7 in integer file N7:0/0. The configuration software (OP–WINEDIT) allows you to operate the pushbuttons as either momentary switches or “maintained” alternate action switches. Pushbutton 5 has been configured as a momentary switch and Pushbutton 7 has been configured as a maintained switch. Pushbutton 8 is a momentary switch but is configured to flash its LED with N7:2/7 while controlling the LED ON/OFF separately from the button status with N7:4/7.

Using the Pushbutton Panel...5 Easy Steps

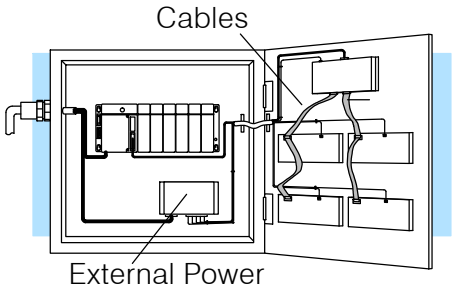
Step 1: Preparing the Pushbutton Labels (Pages 6-7)

First, you need to prepare the labels for each of the pushbuttons. The labels insert into plastic sleeves behind the main cover. To access the sleeve, you merely snap loose the front bezel.



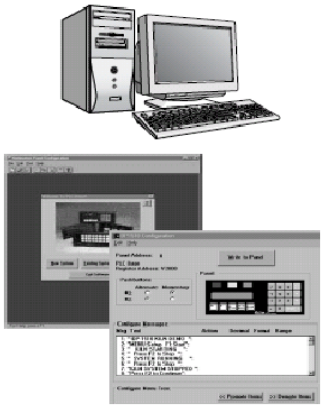
Step 2: Installing the Panel (Pages 8-14)

Preparing for installation, you will want to check the individual specifications. These include dimensions, power requirements, cabling requirements, and NEMA ratings. We include information you will need for mounting; i.e. cutout dimensions, cabling requirements, components needed, etc.



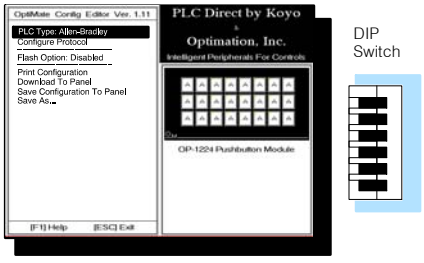
Step 3: Use OP-WINEDIT Software

You will need OptiMate OP-WINEDIT configuration software in order to configure the panel and PLC. OP-WINEDIT is ordered as a separate item from the OptiMate panel from AutomationDirect.
The software is used for both ***Direct***LOGIC and Allen-Bradley PLCs.



Step 4: Configure the Panel to Work with the CPU (Pages 15-16)

After setting a DIP switch on the rear of the panel and attaching the programming cable, you are ready to configure your panel. The simple and easy-to-follow screens make configuration a painless process.



Step 5: Applying Ladder Logic (Pages 17-41)

The amount of ladder logic programming knowledge you need is very basic. In most cases, you are already familiar with the elements of logic that are required. We'll give you examples in the final section of this manual, and you will see right away just how easy it is.