Sections

This table provides an overall description of the topics covered within this manual.

1	**Introduction**	Introduces the physical and functional characteristics. Also provides introduction to planning your system.
2	**Memory Mapping**	Explains memory mapping in a multi-panel configuration.
3	**Installation and Specifications**	Shows how to prepare for system installation, including specifications and mounting instructions. Includes connecting cables part numbers and specifications.
4	**Configuring Your Panels**	Shows how to configure the panel. The OP–WINEDIT for windows contains Help windows which will assist with configuring the panels.
5	**Trouble Shooting**	Shows you how to diagnose and correct common problems.

Introduction

Is this Manual Right for You?

The OP-9001 Communications Master provides an intelligent interface between your programmable controller (PLC) and two or more OptiMate ™ panels. This manual shows you how to install, configure and operate your OP-9001 Communications Master. It includes wiring diagrams and power requirements, as well as the information you need for selecting the proper connecting cables.
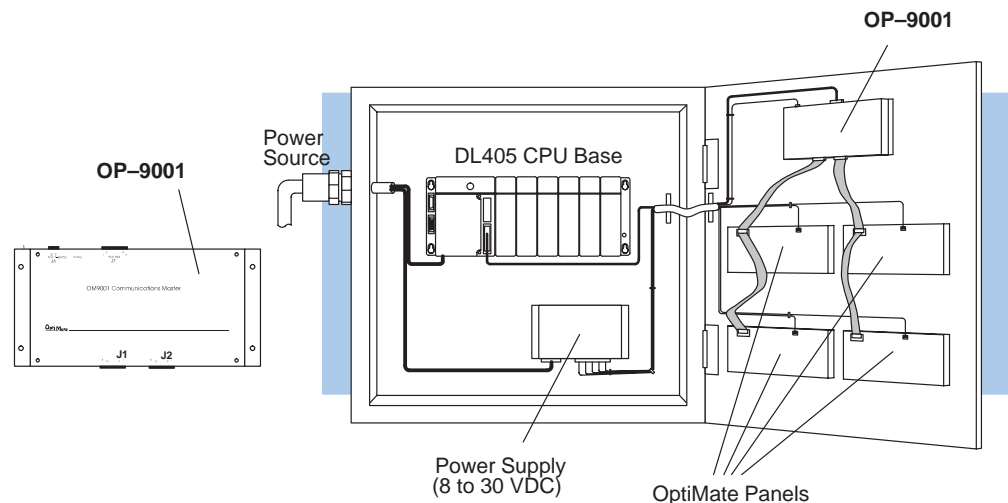
Additional Manuals

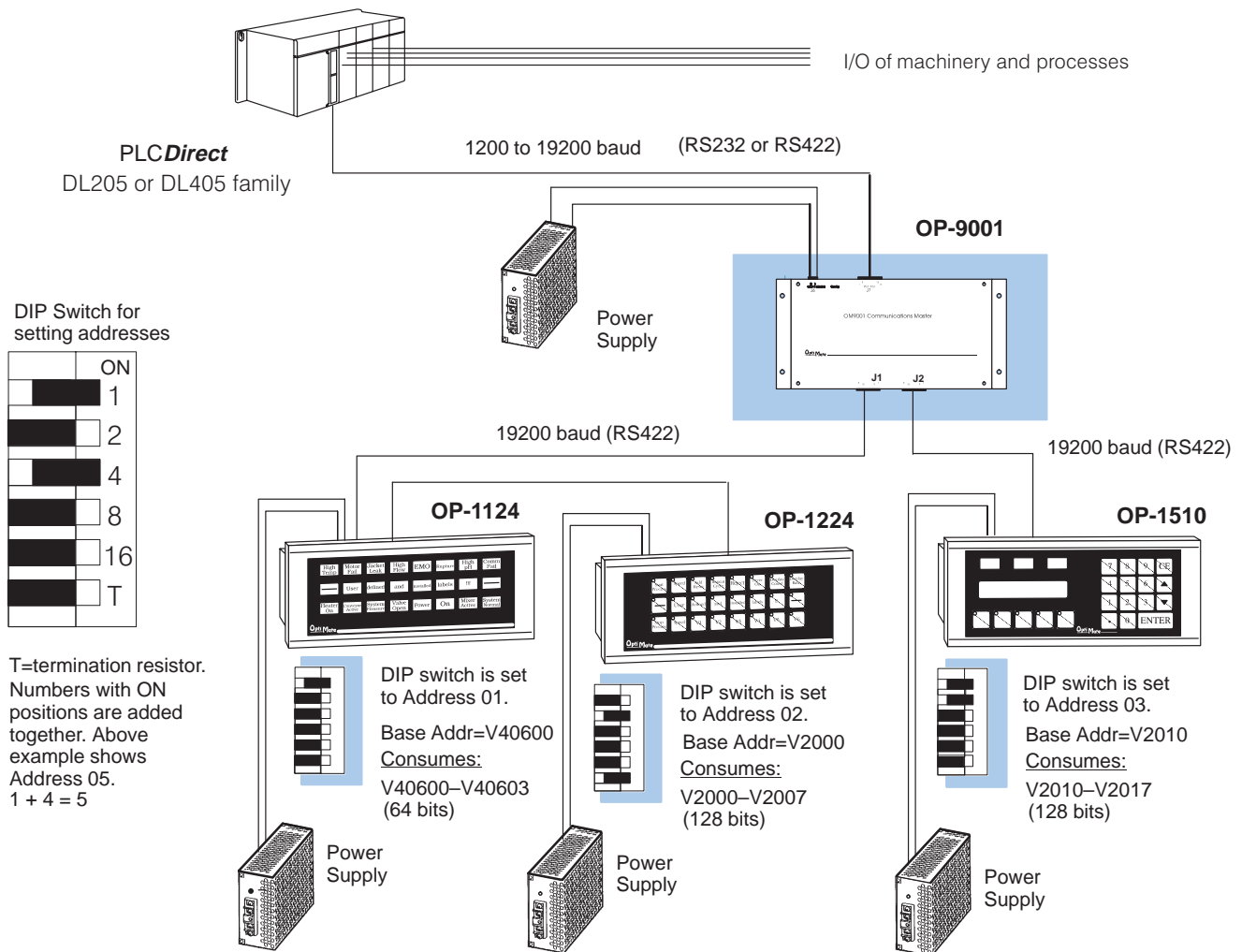There are several other manuals you will find helpful or necessary:

- Respective PLC User Manuals–Shows you the memory conventions, programming instruction sets, data or file types, communications protocol, etc.
- Respective OptiMate operator panel User Manuals–Shows you the memory mapping requirements, modes of operation, ladder logic needed for operation of the respective panel, initial setup requirements, and much more.

How the OP-9001 Communicates

The OP-9001 communicates with your OptiMate panels via two RS422 ports at a baud rate of 19200. It communicates with your PLC at the rate you indicate during configuration. Depending on brand and model of PLC, this will be some rate between 1200 and 19200 baud. Later on in this manual, we will show you how to select the communication baud rate between your OP-9001 and PLC. This is done with the same OPEditor software that you use to configure the individual OptiMate panels.

The OP-9001 knows which OptiMate panel is sending information to it, because each OP panel has a unique address assigned via its respective DIP switch. You can have up to 31 panels connected to a single OP-9001. Addresses 0 thru 30 are available for this purpose. See the diagram below for more about DIP switch settings.

Shown below is a sample configuration using a PLC*Direct* programmable controller, a pushbutton panel (OP-1224), a lamp annunciator panel (OP-1124) and a menu-driven operator panel (OP-1510). Notice that each panel has a unique address, and that each panel has been assigned specific memory inside the PLC for the purpose of "mapping" your configurations.

I/O of machinery and processes

PLC*Direct*
DL205 or DL405 family

1200 to 19200 baud   (RS232 or RS422)

OP-9001

Power
Supply

OM9001 Communications Master

J1   J2

DIP Switch for
setting addresses

ON
1
2
4
8
16
T

T=termination resistor.
Numbers with ON
positions are added
together. Above
example shows
Address 05.
1 + 4 = 5

19200 baud (RS422)

19200 baud (RS422)

OP-1124

OP-1224

OP-1510

DIP switch is set
to Address 01.

Base Addr=V40600
Consumes:
V40600–V40603
(64 bits)

DIP switch is set
to Address 02.
Base Addr=V2000
Consumes:
V2000–V2007
(128 bits)

DIP switch is set
to Address 03.
Base Addr=V2010
Consumes:
V2010–V2017
(128 bits)

Power
Supply

Power
Supply

Power
Supply

# Using the Communications Master...5 Easy Steps

Step 1: Plan Your System of Panels (Pages 4–7)

In the next section, we provide you with a template for planning your multi-panel OptiMate system. It's main purpose is to have you plan in advance what base register addresses you want to use for each panel, and to make sure that the consecutive bits consumed by each panel during the mapping process do not overwrite each other. You need to know this information when you do the configuration in Step 3.

Step 2: Install the Panels and the OP-9001 (Pages 8–16)

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. This manual includes only the specifications for the OP-9001. Review the individual OptiMate User Manuals for each respecitive panel used.

Cables

External Power
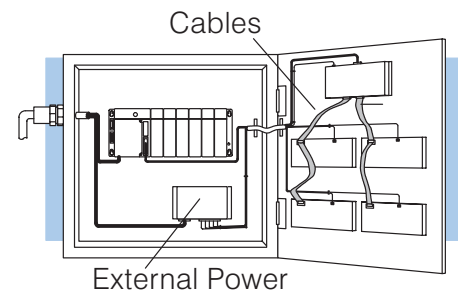
Step 3: Configure the System and the Individual Panels (Pages 17–22)

You need the OptiMate™ OPEditor software in order to configure the system and all the individual panels. At the time of publication, we have a DOS version with the introduction of a Windows version due in early 1996. This software is the same regardless of whether you are connecting to a PLC *Direct* or Allen-Bradley product.

Your PC
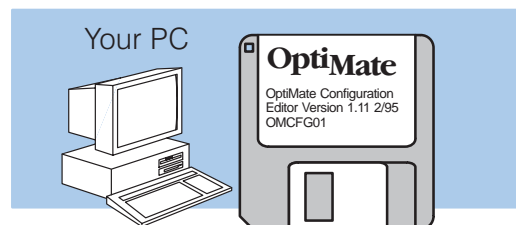
Step 4: Download the Configurations to Each Panel (Page 21)

As you configure the OP-9001 for a multi-panel system, you will be configuring each panel as a part of the overall configuration process. After each panel is configured, you will then download the configuration to the individual panel.
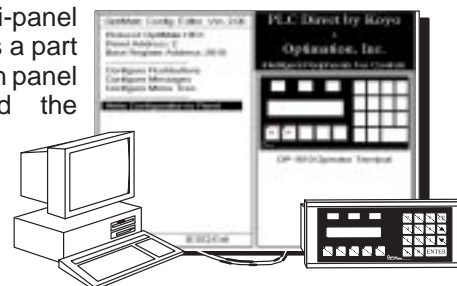
Step 5: Download the System to the OP-9001 Master (Page 22)

After all the panels have been downloaded with their respective configurations, you then download the overall scheme to the OP-9001 itself. This requires that you set a jumper on the OP-9001.

Set the Jumper for Downloading