

# SECTION 1. INTRODUCTION TO THE PC-1100/1200

## 1-1. GENERAL DESCRIPTION

The Westinghouse PC-1100/1200 programmable controllers are microprocessor-based controllers designed for a wide range of small- to medium-sized industrial control applications. The rugged construction, simple programming and powerful control capabilities of the PC-1100/1200 are backed by Westinghouse with a comprehensive support program to maximize the performance of the system.

This document describes the installation, programming, and operation of the PC-1100/1200 controllers.

Westinghouse is dedicated to meeting industry's control requirements with its programmable controller products. Contact your Westinghouse Sales Representative for information about the latest product developments. To request information or comment on the Westinghouse programmable controllers and their application, use the post-paid card provided at the back of this manual.

## 1-2. PC-1100/1200 Family of Controllers

Westinghouse offers a full line of controllers to meet a variety of needs. This volume describes the PC-1100/1200 family of controllers, which includes the PC-1100, PC-1200, and PC-1250.

Several versions of the PC-1100, PC-1200, and PC-1250 are available. They provide a range of memory and I/O capabilities, appropriate for small to medium sized applications. These Westinghouse controllers all use the same base set of special functions, providing compatibility for networking or program transfer.

The primary differences among these controllers are listed below:

- **Memory size** ranges from 0.5 to 16K.
- **I/O Capacity** ranges from 128 discrete/ 16 register to 512 discrete/ 256 register.
- **Dual I/O bus** in the PC-1250 provides expanded I/O capacity with rapid updating.
- **Expanded special function sets** are provided by several PC-1100, -1200, and -1250 models.

Table 1-1 gives a complete listing of the available PC-1100 models. Table 1-2 describes the PC-1200 and -1250 models. For details on the special functions supported by each model, refer to Section 5.

TABLE 1-1. PC-1100 MODELS

Catalog Numbers	Memory Size	Total I/O Capacity <sup>1</sup>	
		Discrete	Register
PC-1100-1011, -1021, -2011, -2021,	0.5K	128	16
PC-1100-1012, -1022, -1052, -2012, -2022, -2052	1.5K	128	16
PC-1100-1013, -1023, -1033, -2013, -2023, -2033	2.5K	128	16
PC-1100-1014, -1024, -1054, -2014, -2024, -2054	3.5K	128	16

<sup>1</sup> 'Total I/O capacity' refers to combined number of inputs and outputs. For example, 64 discrete inputs plus 64 discrete outputs equals 128 total discrete I/O.

TABLE 1-2. PC-1200 AND -1250 MODELS

Catalog Number	Executive Number <sup>1</sup>	Memory Size	Total I/O Capacity <sup>2</sup>	
			Discrete	Register
PC-1200-1020	1207	2K	128	64
PC-1200-1040	1206	2K	<del>128</del> 256	<del>64</del> 128
PC-1200-1041	1205	4K	256	128
PC-1200-1042	1204	8K	256	128
PC-1200-1043	1203	16K	256	128
PC-1250-1042	1202	8K	512	256
PC-1250-1043	1201	16K	512	256

<sup>1</sup> The 'Executive Number' is displayed on the program loader status screen.

<sup>2</sup> 'Total I/O capacity' refers to combined number of inputs and outputs. For example, 64 discrete inputs plus 64 discrete outputs equals 128 total discrete I/O.

**Note**

Throughout this volume, the term 'PC-1200' is used to refer to the PC-1200 or -1250. The term 'PC-1250' is used only when discussing differences between the -1200 and -1250, such as the dual I/O bus.

### 1-3. SCOPE

This manual consists of the following sections:

- Section 1. Introduction: Provides an overview of the scope and content of this document, provides unpacking and storage instructions, and lists other reference documents.
- Section 2. System Overview: Describes the PC-1100/1200 control system components and performance.
- Section 3. Installation and Start-up: Provides installation and start-up procedures.
- Section 4. Programming Approach: Describes the programming approach used with the PC-1100/1200 controllers.
- Section 5. Special Functions: Provides a description of each special function (presented in alphabetical order for easy reference).
- Section 6. Troubleshooting: Describes the PC-1100/1200 fault indications, and provides a suggested procedure for troubleshooting the controllers.

### 1-4. UNPACKING PROCEDURES

Westinghouse programmable controllers and associated hardware are extensively tested and carefully packed prior to shipment. This equipment, when delivered, should be inspected for visible damage. It should also be inventoried to verify that both the quantities and types of components ordered have been delivered. The equipment should also be tested to ensure that it is operational. (See Section 3 for instructions on handling this equipment upon delivery.)

#### NOTICE

**ANY CLAIM FOR DAMAGES SHOULD BE FILED WITH THE CARRIER OR HIS AGENT. ALSO, NOTIFY THE FACTORY SO THAT CORRECTIVE ACTION CAN BE TAKEN AT THE EARLIEST POSSIBLE TIME.**

### 1-5. STORAGE

If the equipment is not used immediately upon arrival, place it in the original shipping cartons and store in a dry protected location with the following characteristics:

Storage temperatures: -40°C to +60°C (-40°F to <sup>140</sup>~~149~~°F)

Relative humidity: 0 to 95% non-condensing.

## 1-6. REFERENCE MANUALS

The information in this manual applies only to PC-1100 and -1200 programmable controllers.

For additional information on the available program loaders, refer to the following documents:

- "CRT Programming Manual" (NLAM-B56)
- "Mini Loader Programming Manual" (NLAM-B60)
- "PC Communications Manual" (NLAM-B58)
- "Advanced Program Loader Programming Manual" (NLAM-B816)
- "Offline Programming Utilities" (for NLSW-784 or NLSW-783U)

For additional information on the available I/O modules and other components, refer to the documents listed in Table 1-3.

**TABLE 1-3. I/O MODULES AND OTHER COMPONENTS**

Component	Catalog No.	Instruction Leaflet No.
8-point Input Modules 12-48, 120, 240 VAC/DC	NL-1003, -1005, -1006	IL-15675
8-point Output Modules 120, 24, 240 VAC	NL-1020, -1022, -1023	IL-15680
8-point Output Modules 5, 24, 48 VDC	NL-1025, -1026, -1027	IL-15676
16-point Input Module 24 VDC	NL-1030F	--
16-point Output Module 24 VDC	NL-1060F	--
8-bit A/D Input Modules 0-5 V (4- or 8- channel)	NL-1045, -1046	IL-15683
8-bit A/D Input Modules 4-20 mA (4- or 8- channel)	NL-1049, -1050	IL-15684
8-bit D/A Module (4-channel)	NL-1057	IL-18457
12-bit A/D Input Module	NL-1052	--

**TABLE 1-3. I/O MODULES AND OTHER COMPONENTS, CONT'D**

Component	Catalog No.	Instruction Leaflet No.
Register Input Module	NL-1017	IL-15681
Register Output Module	NL-1018	IL-15680
Relay Output Modules	NL-1015, -1016	IL-15678
Watchdog Module	NL-1080	IL-18456
PC-1100/1200 Main Racks	NLR-1004, -1008, -1012, -1016	IL-15677
Expansion Racks	NLRE-1009, -1011, -1011B, -1013, -1017	IL-15693
Expansion Power Supply	NLE-1070	--
Communication Expansion Module	NL-1075	IL-15753
Rack Bus Expansion Module	NL-1076	IL-15693
Dual Bus Expansion Module	NL-1077	--
Memory Safe Module	NLMS-1100 A, B, C	IL-15694