



Accredited Technician Program

MAXSYS®

INTEGRATED SYSTEMS TECHNOLOGY

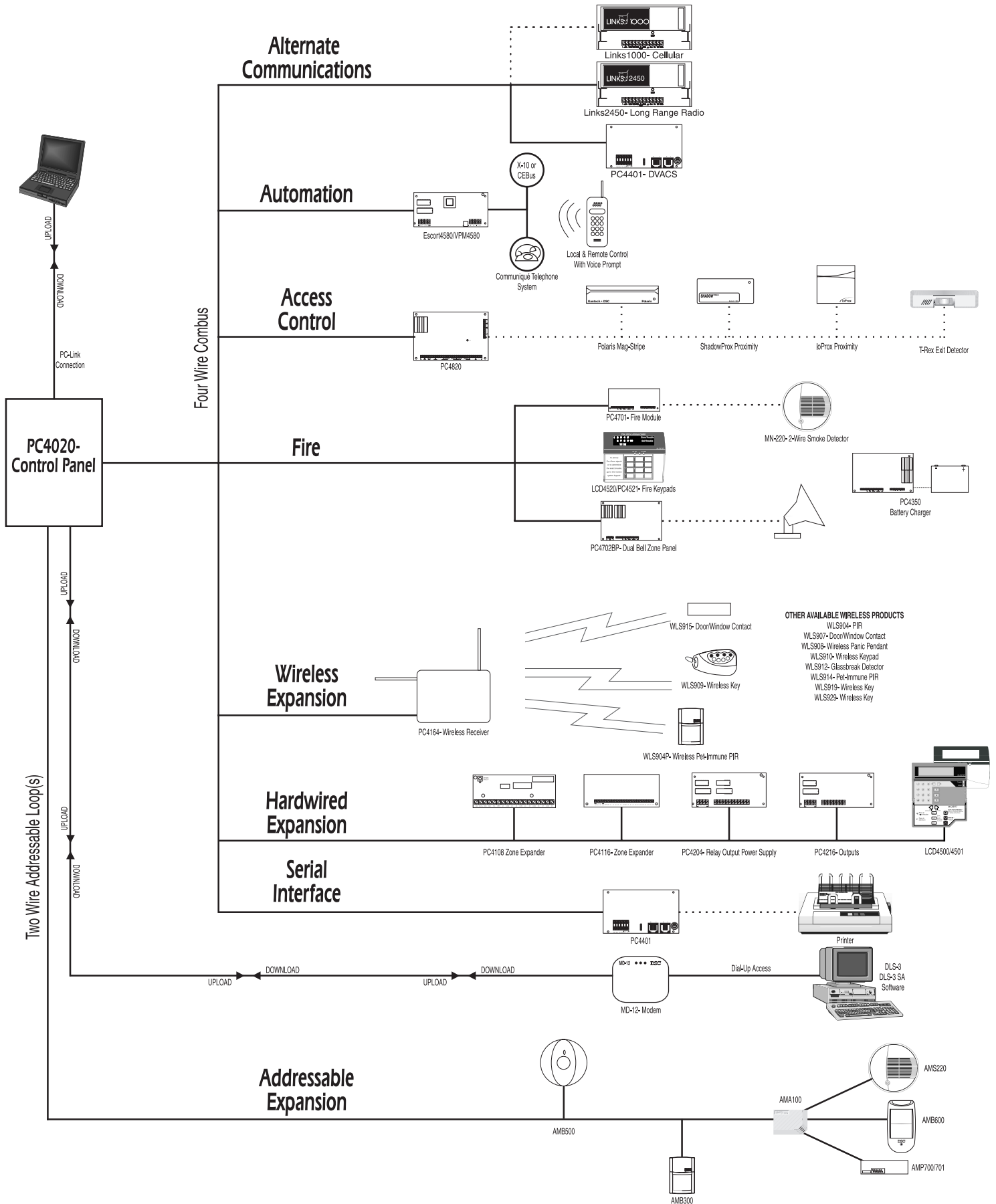


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Introduction

Section 1

Thank you for purchasing the Maxsys Accredited Technician Program. By completing and submitting all tests in this video package, you will be eligible to become an Accredited Maxsys Installer, recognized in the United States by NBFAA and by CANASA in Canada.

When you become an accredited installer, you will receive fewer end user trouble calls regarding your installations. Your knowledge of the Maxsys system will save you time and headaches, and will in turn make your customers very happy.

Opening the Video Package

In the video package, you should receive the following items:

- I - Accredited Maxsys Installer videocassette
- I - Maxsys Accredited Technician Program Workbook
- I - Maxsys Literature Package

How to Use this Workbook

This workbook is your guide to the successful completion of the video training.

Each section of the video has a corresponding workbook section. Below the workbook section heading is the video time at which the video section begins.

Before you begin watching the video section, read the workbook section carefully. Each workbook section contains the following headings:

1 Section Overview

This will include a list of the topics covered in the video section.

2 Terminology

This is a list of the terminology used in the video section that will appear in the glossary at the back of the workbook.

3 Before You Start

This section will instruct you to read sections in one of the provided product manuals. You should read the suggested sections before viewing the video so you are familiar with the topic and can gain more from your viewing experience.

Section Test

If you are using the video series to become a Maxsys Accredited Technician, you will be required to complete the test at the end of the Workbook. The tests must be sent to DSC for grading (see **Becoming a Maxsys Accredited Technician** in this section for more information).

Main Panel Overview

Section 2

Video time 00:02:30

Section Overview

In this section, you will learn the following:

- the function and wiring of all terminals on the PC4020 terminal strip
- rules for wiring the Combus
- how and when to use the PC4204 Power Supply module

Terminology

The following terms used in this section appear in the glossary:

Combus

PTC

Before You Start

Before you begin watching this section, read section 2 *Installation and Wiring* in your PC4020 *Installation Manual*. Many important topics not covered in the video are described in the *Installation Manual*, such as:

2.1 *Planning the System* : a detailed outline of all steps required in completing a successful PC4020 installation.

2.3 *Current Ratings - Alarm Control Panel and Modules* : includes how to calculate current requirements for the system to determine if additional power supply modules are required
2.4 *Combus Operation and Wiring* : includes more information on the rules for Combus wiring including capacitance, line loss and the PC4204 Power Supply.

How to Program

Section



Video time: 00:07:00

Section Overview

In this section, you will learn how to program, including:

- using the menu system
- using the reference number system
- decimal and hexadecimal data

Terminology

The following terms used in this section appear in the glossary:

- decimal digits
- hexadecimal digits
- toggle option

Before You Start

Before you begin watching this section, read the following sections in your PC4020 *Installation Manual*:

- How to Program
- Installer's Code

Enrolling Modules

Section 4

Video time 00:11:10

Section Overview

In this section, you will learn how to do the following:

- enroll the first keypad
- enroll additional keypads
- enroll zone expanders
- enroll the Escort4580 and PC4701 Fire module
- enroll all other modules
- delete modules
- confirm modules

Terminology

The following terms used in this section appear in the glossary:

- global keypad
- partition

Before You Start

Before you begin watching this section, read the following sections in your PC4020 *Installation Manual*:

- 4.1 Enrolling Keypads and Modules
- 4.2 Deleting Modules
- 4.3 Confirming Modules

Wireless Devices

Section 5

Video time 00:17:00

Section Overview

In this section, you will learn how to do the following:

- connect the PC4164 wireless receiver to the main panel
- enroll wireless devices
- perform wireless placement tests
- test coverage patterns
- operate the RF tester

Terminology

The following terms used in this section appear in the glossary:

serial number

Before You Start

Before you begin watching this section, read the following sections in your PC4164 *Installation Manual*:

Section 2 Getting Started

Section 3 Enroll and Program Wireless Devices

Section 4 Testing and Mounting Devices

Section 5 Deleting & Replacing Devices and Modules

Important topics not covered in the video are explained in the PC4164 *Installation Manual*. Read them to gain a full knowledge of the product:

Section 6 Additional Programming Notes - describes additional features such as device supervision, trouble conditions and RF jam detection

Section 7 Troubleshooting - describes possible causes and fixes for specific installation problems

Addressable Devices

Section 6

Video time 00:25:35

Section Overview

In this section, you will learn the following:

- what is AML technology?
- available AML devices
- how to program the main panel for AML operation
- how to enroll AML devices
- how to test AML devices, including programming the smoke detector test schedule

Terminology

The following terms used in this section appear in the glossary:

AML

serial number

Before You Start

Before you begin watching this section, read the following sections in your PC4020 *Installation Manual*:

Section 2.8 AML Device Wiring

Section 4.4 Enrolling AML Devices

System Programming

Section 7

Video time 00:31:10

Section Overview

In this section, you will learn about the following system programming items:

- installer options, including programming all Master codes

- event messages

- system options, including system and keypad toggle options, keypad lockout, system times and zone supervision

Terminology

The following terms used in this section appear in the glossary:

- toggle option

Before You Start

Before you begin watching this section, read the following sections in your *PC4020 Installation Manual* (for keypad options, see Section 6.1 Partition Keypads and Section 6.2 Global Keypads):

- Section 6.5 Fire, Auxiliary and Panic Keys

- Section 6.6 Keypad Lockout

- Section 7.2 Other Access Codes

- Section 9 Entry and Exit Delay

- Section 10.4 Event Messages

Partition Programming

Section

8

Video time 00:38:35

Section Overview

In this section, you will learn how to program partitions, including:

- account numbers
- partition toggles
- partition times
- zone assignment, including adding, deleting and editing zone labels, types, options and attributes
- partition labels
- access level schedules
- command output labels

Terminology

The following terms used in this section appear in the glossary:

- partition
- toggle option

Before You Start

Before you begin watching this section, read the following sections in your PC4020 *Installation Manual*:

Section 5 Partitions and Zones

Communicator

Video time 00:47:50

Section Overview

In this section, you will learn how to do the following:

- program telephone numbers, communicator formats and dialer directions
- use the SIA, Contact ID and pager formats
- program a backup telephone number

Terminology

No terms used in this section appear in the glossary.

Before You Start

Before you begin watching this section, read the following sections in your PC4020 *Installation Manual*:

Section 12.1 Telephone Numbers

Section 12.5 Dialer Direction

Section 12.6 Communicator Formats

Appendix A Reporting Codes

Many topics included in Section 12 Communications Programming are not covered in the video. These include account code programming, communicator toggle options and reporting codes. Please read all of Section 12 to gain a full understanding of communications programming.

PGM Outputs

Video time 00:53:20

Section Overview

In this section, you will learn how to do the following:

- program main panel PGM outputs, PC4204 relay outputs and PC4216 custom groups
- install PC4632/4664 graphic annunciators

Terminology

The following terms used in this section appear in the glossary:

PGM output

Before You Start

Before you begin watching this section, read the following sections in your PC4020 *Installation Manual*:

Section 11 Programmable Outputs

Schedule Programming

11 Section

Video time 00:58:10

Section Overview

In this section, you will learn how to program the following:

- date schedules
- intervals
- holiday schedules
- automatic arming/disarming schedules
- user code schedules
- AML smoke detector test schedules

Terminology

The following terms used in this section appear in the glossary:

- date schedule
- interval

Before You Start

Before you begin watching this section, read the following sections in your PC4020 *Installation Manual*:

Section 14 Event Scheduling

Section 8 Arming and Disarming

Keypad Operation

Video time: 01:04:20

Section Overview

In this section, you will learn the following:

- how to arm and disarm single and multiple partitions
- when to use global or partition keypads
- keypad functions ([*][1] to [*][0])

Terminology

The following terms used in this section appear in the glossary:

- command output
- global keypad
- partition keypad

Before You Start

Before you begin watching this section, read the following sections in your PC4020 *Installation Manual*:

Section 6 Keypad Operation

see Section 11.2 Programmable Output Options for information on programming command outputs

In addition, read your PC4020 Instruction Manual for a thorough understanding of system operation.

Escort Module

Video time 01:19:20

Section Overview

In this section, you will learn how to do the following:

- wire and enroll the Escort module
- program the Escort, including zone labels and X-I/O automation items

Terminology

No terms used in this section appear in the glossary.

Before You Start

Before you begin watching this section, read your Escort4580 *Installation Manual* for a more thorough understanding of the product.

Access Control

14 Section

Video time 01:32:30

Section Overview

In this section, you will learn the following:

- PC4820 module wiring

- how to wire and program readers

- access control scheduling, including assigning readers to door, determining user groups, assigning access levels and defining schedules. All are demonstrated by example for clarification.

Terminology

The following terms used in this section appear in the glossary:

- partition

Before You Start

Before you begin watching this section, read your *PC4820 Installation Manual* for a more thorough understanding of the product.

Commercial Fire

Video time 01:51:30

Section Overview

In this section, you will learn the following:

- how to wire the PC4701 Dual Line Dialer, PC4702BP Dual Bell Panel, LCD4520/21 Fire keypads, PC4204CF Power Supply, and PC4612/4612A Fire Zone Annunciators
- the operation of fire zones and fire outputs
- fire system operation, including auto scroll display, manual and automatic signal silence, fire reset, fire troubles, bypassing fire zones, fire drills, fire inspector tests, lamp test and AML smoke detector tests

Terminology

No terms used in this section appear in the glossary.

Before You Start

Before you begin watching this section, read your PC4020CF *Installation Manual* for a more thorough understanding of the product.

Downloading

Video time 02:14:00

Section Overview

In this section, you will learn how to do the following:

- enable downloading
- program the downloading access code and call back feature
- download using the PC-Link

Terminology

The following terms used in this section appear in the glossary:

DLS

downloading

PC-Link

Before You Start

Before you begin watching this section, read the following sections in your PC4020 *Installation Manual*:

Section 13 Downloading

Glossary

Appendix

AML: Addressable Multiplex Loop. A 2-wire loop used by the main panel to provide power to and communicate with AML type devices.

Combus: a 4-wire connection from the main panel to all modules and keypads on the system used for system communication.

Command output: a programmable output activated by entering the appropriate [*][7][1-8] keypad command.

Date schedule: used by the main panel to determine when programmed events will occur (e.g., automatic arming/disarming, user access, scheduled diagnostic tests, etc.)

Decimal digits: numbers [0]-[9]. Decimal digits are required for most programming items

DLS: Downloading Software. Computer software used to download programming data directly into the main panel, without requiring keypad programming.

Downloading: a means of programming the main panel by sending programming data from a computer to the main panel via a telephone line or the PC-Link. Downloading software (DLS) is required for this feature.

Global keypad: a keypad that is not assigned to a partition but which can be used to access all partitions on the system

Hexadecimal (HEX) digits: letters [A]-[F]. HEX digits are sometimes required in programming items such as telephone numbers, account numbers and reporting codes.

Interval: the information in a date schedule containing the time and days that the schedule will be active. Each date schedule has four intervals.

Partition keypad: a keypad assigned to a partition and primarily used to access the programmed partition.

PC-Link: a connector used to connect a laptop computer directly to the main panel for downloading purposes

PGM Output: programmable output. Either voltage outputs or dry contacts that can be individually programmed to activate for one of a number of programmed options. The PC4020 has 59 options available.

PTC: Positive Temperature Coefficient. This component is used instead of fuses on the main panel. If excessive current is drawn on PTC-protected circuits, the PTC will open the circuit until the panel is reset.

Partition: a section of the system. Each partition operates independently of other partitions, with its own zones, users, and delay times, etc.

Serial number: a factory-assigned code unique to all wireless and AML devices. The main panel uses the serial number to identify the device once it is enrolled.

Toggle option: a programming item that is either enabled or disabled. When enabled, the option is toggled to Y (yes); when disabled, it is toggled to N (no).

Becoming a Maxsys Accredited Installer

Maxsys Self Test

The following is a self test designed to test your knowledge of the majority of features and functions available with the Maxsys System. The test does not require you to memorize the information. Refer to the Installation Manuals and Videos as often as you wish. Make sure your answers are legible, and keep them as short as possible, point form is acceptable.

Return the self test to the following address:

In the United States:

DSC
160 Washburn Street
Lockport, New York
14094
Attn: Accredited Technician Program

In Canada:

DSC
3301 Langstaff Road
Concord, Ontario
L4K-4L2
Attn: Accredited Technician Program

Your test will be evaluated and returned to you. If you receive a mark of 80% or higher you will receive a Maxsys Accredited Technician Certificate in recognition of your proficiency.

Questions or comments can be sent via e-mail to **atp@dscltd.com**.

Please fill out the following information for the certificate:

Full Name: _____

Company: _____

Address: _____

City: _____

State: _____

Zip/Postal Code: _____

Phone Number: _____

Fax Number: _____

E-mail: _____

Section Test 1

Main Panel Overview

1. What three outputs on the main panel are PTC-protected?

2. How much AUX power is available from the main panel?

3. What five terminals on the main panel draw their current from the AUX supply?

4. If more than 700mA is required from the Bell Output, where does the panel get the extra current from?

5. Other than being used as a programmable output, what other feature can either main panel PGM Output be used for?

6. What are the three rules for wiring the modules to the Combus?

7. Capacitance on the Combus increases as more wire is added.

☐ True ☐ False

8. 18 gauge wire has more capacitance per foot than 22 gauge wire.

☐ True ☐ False

9. What is the minimum voltage that must be present on each module to ensure proper operation?

10. A PC4204 Power Supply module is required to power additional modules on the system.

☐ True ☐ False

Section Test 2

Enrolling Modules

1. Modules need to be connected to the Combus before they are enrolled.

☐ True

☐ False

2. What must be done to enroll the first keypad on the system?

3. When enrolled, which partition is the first keypad automatically assigned to?

4. When enrolling additional keypads, which of the following must you do to get the keypad to enroll?

☐ Press any key

☐ Create a tamper

☐ Nothing

5. When enrolling a hardwired zone expander, which of the following must you do to get the module to enroll?

☐ Press any key

☐ Create a tamper

☐ Nothing

6. When enrolling an Escort module, which of the following must you do to get the module to enroll?

☐ Press any key

☐ Create a tamper

☐ Nothing

7. The following zone expanders are enrolled in order. What zones will be assigned to each?

PC4108 Zone Expander Zones _____ to _____

PC4108 Zone Expander Zones _____ to _____

PC4164 Wireless Receiver Zones _____ to _____

8. Give one reason why a module would have to be deleted.

Wireless Devices

Section Test 3

1. What is the maximum number of wireless zones on a system? _____
2. What is the open air range of the spread spectrum wireless signal? _____
3. The PC4164 v2.0 receiver requires 6-digit serial numbers. If the wireless transmitter being used only has a 5-digit serial number, how is the serial number entered?

4. A PC4164 wireless receiver has been enrolled and is assigned zones 17 to 80. What zone will be assigned to the first device serial number entered?

5. Do WLS909 wireless keys use up zones on the system?
☐ Yes ☐ No
6. Can the four function buttons on each wireless key be programmed to operate different partitions?
☐ Yes ☐ No
7. How often does any wireless detector send a supervisory pulse to let the receiver know it is still able to communicate? _____ minutes
8. Under normal operation, does a wireless motion detector's LED turn on when motion is detected?
☐ Yes ☐ No
9. Under normal operation, does a wireless glassbreak detector's LED turn on when breaking glass is detected?
☐ Yes ☐ No
10. What must you do to put a wireless motion detector into walk test mode?

11. What must you do to put a wireless glassbreak detector into walk test mode?

12. What feature is built into wireless motion detectors to prevent them from transmitting every time motion is detected, thereby improving battery life?

Section Test 4

Addressable Devices

1. What is the maximum number of zones that can be addressable on a system? _____
2. Which main panel PGM outputs can be used to support addressable detectors?

3. What is the maximum amount of current that can be drawn from each main panel PGM output if they are being used to support addressable detectors? _____
4. What is the approximate maximum distance of wire that can be used to wire 112 addressable smoke detectors if they are all connected to a single pair of 18 gauge wire?

5. What is the approximate maximum distance of wire that can be used to wire 112 addressable smoke detectors if they are connected to four different 18 gauge wire runs, with 28 detectors on each? _____
6. What is the maximum time it will take the panel to see an addressable zone violation if one PGM output is used with 32 or fewer detectors enrolled? _____
7. Do addressable detectors need to be connected before they are enrolled to the system?
☐ Yes ☐ No
8. What will the keypad display if an addressable serial number is entered and the detector cannot be found on the loop?

9. What will the keypad display if an addressable serial number is entered and the detector has already been enrolled to the system previously?

Section Test 5

Partition Programming

1. What is the activity delinquency feature used for?

2. At default, what partition are zones 1-16 on the main panel assigned to?

3. Do zones need to be assigned to a partition in sequential order?

☐ Yes

☐ No

4. What are the three things that can be done when editing a zone?

5. Which zone types will automatically be bypassed if the partition is armed using the STAY function key?

Communicator

Section Test



1. How many telephone numbers are available? _____

2. What are the three programmable items for each telephone number?

3. What does the first letter 'D' in a telephone number signify?

4. What are the five communicator formats supported by the panel?

5. How many account numbers are programmable in the panel? _____

6. What reporting code must be programmed to prevent the panel from reporting an event?

7. Which of the following telephone numbers can be used to back up Telephone #1?

☐ Telephone #2

☐ Telephone #3

☐ Both

8. What are the four items that must be programmed in order for the Pager feature to work?

Section Test 7

PGM Outputs

1. What are the four programmable outputs on the main panel?

2. How many PGM output options are there? _____

3. What are the four additional program questions that may be asked, depending on which PGM output option is selected?

4. What is the SW AUX output typically used for?

5. What is the maximum current rating of the main panel PGM outputs if they are being used as programmable outputs?

6. The main panel PGM outputs will switch from open collector to 13.8VDC when activated:

☐ True ☐ False

7. How many PC4204 modules can be connected to the panel and how many relay outputs are available on each?

of Modules _____ # of Relays on each _____

8. How many PC4216 modules can be connected to the panel and how many voltage outputs are available on each?

of Modules _____ # of Outputs on each _____

Schedule Programming

Section Test 8

1. What is the total number of schedules supported by the panel? _____

2. Which two date schedules cannot be programmed?

3. How many intervals are programmable for each date schedule? _____

4. What are the six items programmable for each interval?

5. How many holiday groups does the panel support? _____

6. How far in advance can holidays be scheduled?

7. Can a single date schedule be used to both auto arm and auto disarm a partition?

☐ Yes

☐ No

8. Can PGM outputs be programmed to activate by a schedule?

☐ Yes

☐ No

Section Test 9

Keypad Operation

1. When arming using the STAY function key, what types of zones are automatically bypassed?

2. When arming using the STAY function key, will the exit delay sound?

☐ Yes

☐ No

3. What is the keypad command to quick arm a partition?

4. What is the method of arming the system with no entry delay?

5. What partitions will a user see after they enter their code on a global keypad?

6. What user option can be disabled to prevent users of multiple partition from getting a menu when they enter their code?

7. Can the function keys on a keypad be changed from the default options?

☐ Yes

☐ No

8. Can the function keys be programmed differently on each keypad?

☐ Yes

☐ No

9. What is the function of each of the following keypad commands?

[*] [1] _____

[*] [2] _____

[*] [3] _____

[*] [4] _____

[*] [5] _____

[*] [6] _____

[*] [7] _____

[*] [8] _____

[*] [9] _____

[*] [0] _____

10. How many different [*] [7] Commands are there? _____

Section Test 10

Escort Module

1. What type of telephones can be used to access the Escort?

- ☐ Pulse ☐ Tone ☐ Both

2. The Escort can be accessed:

- ☐ Locally ☐ Remote ☐ Both

3. What is the default 3-digit command required to activate the Escort?

4. What is the procedure to have the Escort pick up when accessing it locally?

5. The Escort has a word library. How many words can be used for each label? _____

6. How many individual X-10 devices can the Escort be used to control? _____

7. X-10 devices can be controlled several different ways. Check which of the following are supported in the Escort:

- ☐ Manual Control ☐ PGM Output and Scheduled Control
☐ PGM Output Control ☐ PGM Output or Scheduled Control
☐ Scheduled Control

8. Can the Escort be used as a 'global' module so that it can be used to access different partitions on the system?

- ☐ Yes ☐ No

Access Control

Section Test 11

1. How many PC4820 modules can you connect to the PC4020 control panel? _____
2. How many readers can you connect to each PC4820 module? _____
3. Will a PC4820 module continue to function if there is a problem with the PC4020 control panel?
☐ Yes ☐ No
4. What is the maximum current rating of each of the two lock outputs on the PC4820 module?

5. List the three reader technologies supported by the PC4820 module:

6. Can arming and disarming be done via access control on the PC4020?
☐ Both ☐ Arming Only ☐ Disarming Only
7. What is the purpose of the REX input? What can it be used for?

8. What event will occur when someone opens a locked door?

9. When will the event in the previous question sound the bell output?
☐ Always ☐ Never ☐ Only if Scheduled
10. What event will occur when someone leaves a door open?

11. When will the event in the previous question sound the bell output?
☐ Always ☐ Never ☐ Only if Scheduled
12. Each reader has an LED. Indicate what each of the following LED conditions means:
Steady red _____
Steady green _____
Slow flashing red/green (twice per second) _____
Fast flashing red (4 times per second) _____

Commercial Fire

Section Test

12

1. Which module is supplied with a PC4020CF? _____

2. Which two modules cannot be used on a PC4020CF?

3. Which two zones are present on the PC4701 dialer module?

4. Which two dedicated relays are present on the PC4701 dialer module?

5. What is the voltage and current rating of the two outputs on the PC4702BP bell panel?

_____ Volts _____ Amps

6. What is the default programming for the five function keys on a fire keypad?

7. Which module is used in the PC4612, PC4632 and PC4664 graphic annunciators?

8. Can you select which users can or cannot silence fire troubles and alarms?

☐ Yes

☐ No

9. What is the procedure to silence a fire alarm?

10. What is the procedure to reset a fire alarm?

11. What does the panel test during a manual or scheduled AML Smoke Detector Test?

12. Certain events must be programmed to report to the central station. What is the default programming for these reporting codes?

Section Test 13

Downloading

1. What is downloading used for?

2. What is the keypad command for the end user to enable downloading for one hour?

3. What are the two ways a panel can be programmed to answer the telephone for downloading?

4. What are the two different forms of security to prevent unauthorized downloading of a control panel?

5. If the panel receives the wrong downloading access code, how many chances do you have to enter the correct one before the panel hangs up?

6. If using PC-Link, is a telephone line required for downloading?

☐ Yes ☐ No

7. If using PC-Link, is a modem required for downloading?

☐ Yes ☐ No

8. Why must you ensure the PC-Link cable is disconnected after the download is complete?

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Toronto, Canada
1-800-387-3630 • www.dsc.com
Printed in Canada 29005197 R002