

# MAXSYS™

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## PC4632/PC4664 v1.0 • Installation Manual

**WARNING:** *This manual contains information on limitations regarding product use and function and information on the limitations as to liability of the manufacturer. The entire manual should be carefully read.*

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# Introduction

S e c t i o n 1

The PC4632 and PC4664 are graphic annunciator kits designed to make it easy and economical to add graphic display of system status and operation to your Maxsys system. The graphic display can indicate, at a glance, zone openings and closings, trouble conditions, device operation and system status. The PC4632 can display up to 32 events, while the PC4664 can display up to 64 events.

The display area of the PC4632 is 8½" × 11" (216 mm × 279 mm) in size. The PC4632 is well suited for offices, manufacturing plants and residential applications.

The PC4664 graphic annunciator features an 11" × 17" (279 mm × 432 mm) display screen. The PC4664 is especially suited for larger installations, such as manufacturing plants, warehouses, large offices and residential apartment buildings.

Set-up, installation and programming of the PC4632 and PC4664 are similar. Both graphic annunciator models are described in this manual.

## 1.1 Before You Begin

This manual describes how to install and program a PC4632 or PC4664 annunciator on a PC4010/4020 security system. You should have completed the following steps in your PC4010/4020 installation, before you install the annunciator:

1. Plan the installation and wiring of the PC4010/4020 system (see PC4010/4020 Installation Manual or System Manual)
2. Install the control panel, and install and enroll at least one keypad to use for programming (see PC4010/4020 Installation Manual or System and Programming Manuals)
3. Install and enroll any zone expander modules you plan to use (see PC4010/4020 Installation Manual, or Programming Manual and the installation sheet for each module).
4. Install and enroll all detectors in their intended locations. This makes planning your annunciator layout easier and more accurate.

Program the annunciator the same way you program the rest of the PC4010/4020 system: from a PC4010/4020 system LCD keypad, or via downloading software. Read your PC4010/4020 Manuals, for more information. Read this manual before you begin installing the annunciator.

## 1.2 Setting up and Installing the Annunciator - Overview

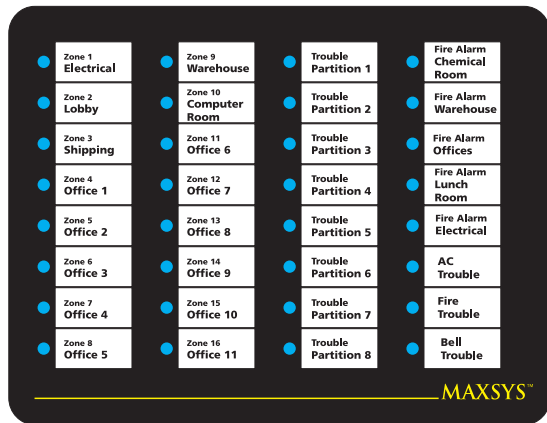
Here is a list of the steps you will take in setting up and installing the annunciator. Review this list, then read the indicated sections in the manual.

1. Decide what information you want displayed on the annunciator. Decide how many and which zones will be annunciated, as well as any other events that will be indicated.
2. Decide whether you will use the supplied point display artwork or will create a your own graphic display artwork for the annunciator. When designing the display, work with the users of the system to determine what should be indicated, and how it would most clearly be displayed. (See section 2, Creating Annunciator Artwork.)
3. Unpack the annunciator and check that you have all necessary parts (see section 3.1). If you will be using additional PC4216 modules, make sure that you have ordered enough LED assemblies.
4. Assemble the annunciator (see section 3.2).
5. Choose an appropriate mounting location for the annunciator and use appropriate hardware to mount the annunciator cabinet (see section 3.3).
6. Determine if a Combus re-power is necessary and if it is, install and wire a PC4204 module according to the PC4204 Installation Instruction sheet (see section 3.4).
7. Remove power from the system and complete the annunciator wiring (Combus, tamper and LED assembly wiring). (See section 3.5.)
8. Restore power to the system and complete the PC4216 programming (module enrollment and PGM output programming). Record all programming in the Programming Worksheets at the back of this manual (see section 4, Enrollment and Wiring).
9. Test the annunciator using a Lamp Test (see section 4.3).
10. Replace the draft artwork with a completed copy of the finished artwork (if necessary).

# Creating Annunciator Artwork

S e c t i o n 2

Included in your annunciator kit are one ready-made point display graphic and two sheets of clear lexan cut to fit the annunciator, for creating a graphic-style display. This gives you two options for communicating the annunciator information to the end-user. Each kind of display has certain advantages depending on the kind of information the annunciator will show. The point display allows a simple listing of the alarms, zones or other events being indicated. A graphic display allows users to see, at a glance, the status of their system.



Sample of a completed point display (PC4632)



Sample of a completed graphic display (PC4632)

When designing the display, work with the users of the system to determine what should be indicated, and how it would most clearly be displayed.

## 2.1 Using the Point Display Graphic:

Once you know which events the annunciator will indicate, create paper labels describing what event each LED represents (e.g. Alarm – Front Office, or Fire Alarm – Stock Room). The point display artwork is designed to accommodate Avery-style self-adhesive removable labels no. 02214 (0.75" x 1.5"). Stick each label beside the

appropriate LED and insert the graphic in the annunciator door, as described in section 3.2.

After you have completed the wiring on the annunciator, insert the LEDs so that they line up with the appropriate clear circles on the point display graphic (see section 3.5). The LED grid on page *ii*, shows the placement of the LEDs on the PC4632 and PC4664 point display graphics. For the PC4664 display, make two copies of the LED grid and place them side by side.

## 2.2 Creating a Graphic Display

The PC4632 and PC4664 each come with 2 blank transparent sheets cut to fit the display area.

The illustration above shows a typical graphic display for the PC4632. It includes a floor plan of the premises, and labels on each area. The ⊗ symbol indicates the placement of LED indicators behind the screen. When one of the zones is tripped, the LED illuminates on the screen above the name of the zone. This sort of display is most useful for showing users precisely where on the premises zones are open or in alarm.

The process for creating a graphic display involves two steps:

- Designing the display
- Making finished artwork

### Designing the Display

Decide what information you want displayed on the annunciator. Decide how many and which zones will be annunciator, as well as any other events that will be indicated.

It is a good idea to draw a draft of the graphic before you complete the finished artwork. Use the LED grid on page *ii* to determine the placement of the LEDs. For the PC4664, make 2 copies of the LED grid and place them side by side.

For temporary use, the display can be quickly sketched on plain paper and then photocopied onto a transparency. If the display is drawn on translucent paper, such as tracing paper, a transparency is not needed - simply mount the tracing paper in the display.

Check that your display lines up with the placement of the LEDs in the grid. Make any necessary adjustments before making a final copy of your graphic.

### Making Finished Artwork

The graphic display should be printed on a clear material so that the LED indicators in the screen behind the display can be easily seen. Two sheets of clear acetate are included with each annunciator. Translucent tracing paper may also be used.

The easiest way to make transparencies is to photocopy the artwork onto clear acetate sheets.

**CAUTION:** Check the specifications of your photocopier before attempting to copy on to the transparency. Some

*photocopiers require that a specific kind of transparency be used.*

### ***Dry Transfers and Tape***

You can use dry transfer lettering and ruling tape to create a neat, professional-looking display. Dry transfer lettering is easy to use and available at any office supply or artists' supply store. Many manufacturers, such as Letraset, offer a wide variety of symbols and typefaces that can be used in creating a display. Use drafting or ruling tape to create lines, borders, floorplans and other designs. This material is also widely available from office and art supply stores.

When creating a display with transfers and tape, work on a heavy grade of paper or cardstock that permits repeated handling. Read the directions for whichever product you use. When the artwork is complete, photocopy the design onto the transparency and insert it in the graphic annunciator, as described in section 3.2 of this manual.

### ***Computer Artwork***

Many easy-to-use drawing programs are available for home and office computers. These programs allow you to create professional-looking displays in a fraction of the time required for more traditional methods (depending, of course, on your familiarity with the software used).

Artwork from a computer can be printed directly on clear acetate film with most laser printers and some dot-matrix printers.

***CAUTION: Check the specifications of your printer before attempting to print on the transparency. Some printers require that a specific kind of transparency be used.***

Another option is to have your artwork printed directly to clear plastic film. Look under "desktop publishing" in the Yellow Pages to find a service bureau that offers electronic image setting. The service bureau will tell you their requirements for electronic image setting.

When your artwork is completed, install the display as described under Assembly in section 3.2 of this manual.

# Assembly and Installation

## S e c t i o n 3

This section explains how to assemble and install the annunciator. Read the entire section carefully before you begin.

### 3.1 Unpacking

Before you begin assembling your annunciator, check that you have all the necessary parts.

#### PC4632

The PC4632 kit comes with:

- ❑ 1 PC4032C Cabinet, Beige, 10.3"H x 13.3"W x 2.6"D, with an 8½" x 11" (216 mm x 279 mm) display area and space for 2 PC4216 modules
- ❑ 1 PC4216 16-zone output module
- ❑ 1 PC4600LG package: a set of 4 plastic grids used to hold LED indicators in place behind the display screen. Grid mounting hardware included.
- ❑ 1 PC4600LA-M LED package: 10 red, 5 yellow, 1 green LED assemblies
- ❑ 1 PC4632GP – Point/Graphic Display Package:
  - 2 – 8.5" x 11" film transparencies (for graphics)
  - 1 – 8.5" x 11" silk-screened transparency (for point annunciation)
  - 1 – 8.5" x 11" light diffuser sheet
  - 1 – 8.5" x 11" lexan front protective sheet

#### PC4664

The PC4664 kit comes with:

- ❑ 1 PC4064C Cabinet, Beige, 18.7"H x 13.3"W x 2.6"D, with an 11" x 17" (279 mm x 432 mm) display area and space for 4 PC4216 modules
- ❑ 2 PC4216 16-zone output modules
- ❑ 2 PC4600LG packages: 8 plastic grids used to hold LED indicators in place behind the display screen. Grid mounting hardware included.
- ❑ 1 PC4600LA-M LED package: 10 red, 5 yellow, 1 green LED assemblies
- ❑ 1 PC4600LA-R LED package: 16 red LED assemblies
- ❑ 1 PC4664GP – Point/Graphic Display Package:
  - 2 – 11" x 17" film transparency (for graphics)
  - 1 – 11" x 17" silk-screened transparency (for point annunciation)
  - 1 – 11" x 17" light diffuser sheet
  - 1 – 11" x 17" lexan front protective sheet

#### Parts and Accessories

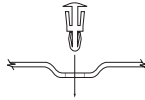
The annunciator kits described above come with enough LED assemblies for the PC4216 modules which are included. If you add additional PC4216 modules to your annunciator, you will need to order additional LED assemblies from the list below. You may also order any of the packages below if you need replacement parts.

- PC4632FT Flush Trim for PC4632
- PC4664FT Flush Trim for PC4664
- PC4600LA-R Package of 16 red LED assemblies
- PC4600LA-G Package of 16 green LED assemblies
- PC4600LA-Y Package of 16 yellow LED assemblies
- PC4600LA-M Package of 10 red, 5 yellow, 1 green LED assemblies
- PC4632GP Point/Graphic Display Pkg. For PC4632
  - 2 – 8.5" x 11" Film Transparency (for Graphics)
  - 1 – 8.5" x 11" Silk-screened Transparency ( for Point Annunciation)
  - 1 – 8.5" x 11" Light Diffuser sheet
  - 1 – 8.5" x 11" Lexan Front Protective sheet
- PC4664GP Point/Graphic Display Pkg. For PC4664
  - 2 – 11" x 17" Film Transparency (for Graphics)
  - 1 – 11" x 17" Silk-screened Transparency ( for Point Annunciation)
  - 1 – 11" x 17" Light Diffuser sheet
  - 1 – 11" x 17" Lexan Front Protective sheet
- PC4600LG Package of 4 LED grids to position LED indicator assemblies

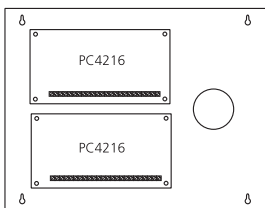
### 3.2 Assembling the Annunciator

Assemble the PC4632/PC4664 before mounting the annunciator on the wall.

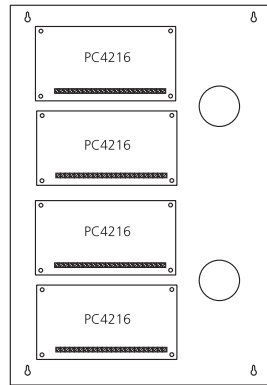
1. Press the white nylon circuit board mounting studs into the raised mounting holes from the back of the panel. Install all of the nylon studs now so that you will be able to install additional PC4216 circuit boards later, if necessary.



2. Align the mounting holes of each PC4216 output module with 4 of the white, nylon mounting studs, as shown below. Press each module onto the mounting studs.

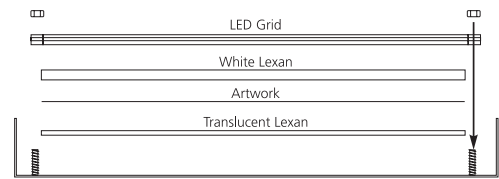


**Figure 1, PC4632 - Module Placement**

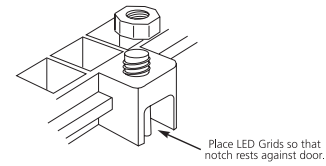


**Figure 2, PC4664 - Module Placement**

3. Place the annunciator display artwork (either the supplied point artwork or your own artwork) between the translucent lexan sheet and the white lexan sheet so that the artwork can be seen through the translucent sheet. (See figure 3 below.)
4. Place the lexan sheets in the display area in the door so that the translucent sheet faces outwards. Ensure that your artwork is visible and right side up when the door is closed.
5. Place one of the black plastic LED grids onto the mounting studs surrounding the display area. Place the grid in the center of the display area to hold the lexan sheets in place while the other grids are installed. Hold the grid in place with the supplied nuts. (See figure 4 below.)
6. Install the remaining grids and secure with the supplied nuts. When the grids are installed, make sure that your artwork is straight in the screen area.
7. Put the nuts on the mounting studs to hold the grids in place, but do not completely tighten them.



**Figure 3, Assembly of graphic display sheets**



**Figure 4, LED Grid Installation**

### 3.3 Finding a Mounting Location

When selecting a location for the graphic annunciator, keep in mind that the annunciator is designed to provide at-a-glance indication of system status and operation. Mount the annunciator where it is clearly visible and easily accessible.

When you have chosen a location:

1. Mark the location of the mounting holes on the wall and drill pilot holes in the wall.
2. If the cabinet is being mounted on a brick, cinder block, drywall or plaster wall, be sure to use plastic wall plugs. Drill holes for the plugs to ensure a tight fit and install the plugs.
3. Secure the cabinet to the wall with the mounting screws provided.

### 3.4 Repowering the Combust

You will probably need to rewire the Combust with a PC4204 power supply module when you are installing a PC4632 or PC4664 on the system. While the PC4010/PC4020 main control panel supplies 500mA over the Combust to power modules and keypads, the demand for current may exceed the supply when the PC4632/4664 is indicating events.

When indicating events, as many as 32 LEDs may be illuminated at once in the PC4632 and up to 64 LEDs may be illuminated at once in the PC4664. Each LED draws up to 20mA of current.

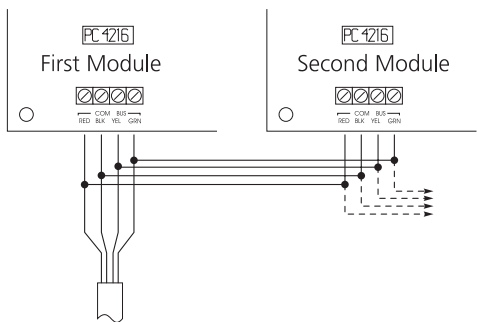
To prevent the demand for current from adversely affecting the operation of the system, you should rewire the Combust as described in your control panel installation manual and in the PC4204 Installation Instruction sheet.

### 3.5 Installation and wiring

There are three stages to wiring the annunciator:

#### A. Wire the Combus to the PC4216 modules

1. Shut off the power to the entire system. Always be sure that the power is off when connecting modules to the Combus.
2. Pull the Combus wiring into the cabinet and prepare each of the four conductors for connection.
3. Connect the red, black, yellow and green conductors of the Combus to the corresponding RED, BLK, YEL and GRN terminals on the first PC4216 module.
4. If more than one PC4216 module is to be installed in the annunciator, prepare one set of red, black, yellow and green jumper wires for each additional PC4216 module.
5. Connect the jumper wires between the corresponding Combus terminals on each module. Note that all of the PC4216 modules installed in the annunciator must be connected to the Combus. Refer to figure 5 below.



**Figure 5, Connecting more than one PC4216 to Combus**

#### B. Tamper Switch

1. Install the tamper switch (not supplied) according to the manufacturer's directions.
2. Connect one lead of the switch to the TMP terminal on the first module. Connect the second lead from the tamper contact to a COM terminal on the first module.
3. If you have more than one PC4216 module installed install a jumper between the TMP and COM terminals of the other PC4216 modules.

*NOTE: If you do not wish to use a tamper contact with your annunciator, install a jumper between the TMP and COM terminal on all of the PC4216 modules in your Graphic Annunciator.*

#### C. LED Indicators

LED indicators are supplied with your graphic annunciator:

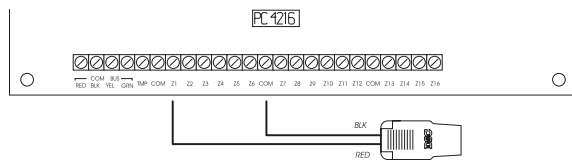
- PC4632 supplied with 16 LED indicators
- PC4664 supplied with 32 LED indicators

Extra LED indicators are available from your distributor should you decide to expand the display capabilities of your annunciator.

*NOTE: The LED indicators supplied are ready to install and **do not require** a resistor between the LED and the terminal.*

To install LED indicators:

1. Connect the red lead to one of the Z terminals on the PC4216 module.
2. Connect the black lead to one of the COM terminals on the same module.



**Figure 6, LED Assembly wiring**

3. Press the plastic LED indicator into the appropriate location on the LED grid. To remove the LED indicators from the grid, firmly pull the LED indicator straight from the grid. **Do not** twist or bend the LED indicators when inserting or removing them from the grid.
3. Install the remaining LED indicators, connecting only one red lead to each of the PC4216 module's Z terminals. Connect the black lead from each LED indicator to a COM terminal on the same PC4216 module.
4. Ensure that the wiring in the cabinet does not interfere with the motion of the cabinet door.



# Enrolling & Programming

## S e c t i o n 4

Follow the instructions below for enrolling and programming each PC4216 module.

If you are enrolling the module on a PC4010/4020 v3.0 or greater system, you can use the reference numbers (indicated by the square brackets, e.g. [0200]) to jump to a programming section.

Refer to your system's installation or programming manual for more information on programming.

### 4.1 Enrolling

You must enroll each PC4216 module with your panel before you can program it. After you enroll the module, the system will ask if you want to enable lamp testing on the module. See section 4.3 for a description of the lamp test feature.

Follow these steps to enroll the module(s):

- 1 At a PC4010/4020 system LCD keypad, enter Installer's Programming ([\*][8][Installer's code]).
- 2 Enter Ref #[0200][\*] OR scroll to **Module Hardware**, press [\*], then, scroll to **Enroll Module**, press [\*].
- 3 Scroll to **PC4216 Module**, press [\*].
- 4 The LCD keypad displays **Create Tamper on Desired Unit**. Tamper and then restore the PC4216 module:
  - a) open and close the tamper switch, if one is installed on the module OR
  - b) momentarily disconnect the jumper wire between the TMP and COM terminals.The LCD keypad displays **PC4216 (nn) Enrolled** where (nn) is the number of the PC4216 module.
- 5 Record the number of the PC4216 module in the programming worksheets.
- 6 Press any key. The keypad displays **Lamp Test Y/N**. Press [\*] to toggle between yes and no. To exit, press [#].
- 7 Repeat steps 3 to 6 for each PC4216 module.
- 8 To exit module enrollment, press [#].

*NOTE: If you need to change the Lamp Test option on a PC4216 module after it has been enrolled, you must delete and then re-enroll the module.*

### 4.2 Programming

Each of the 16 programmable outputs controls a particular LED. Program the 16 outputs on each PC4216 module in one of three ways:

- Alarm annunciation for a group of 16 zones: the LED turns on when an alarm occurs in the corresponding armed zone. The LED remains on until the next time the system/partition the zone is in is armed. Each PC4216 module can be assigned to a pre-set group of 16 zones (alarms 1-16, alarms 17-32, alarms 33-48, etc.)
- Zone follower annunciation for a group of 16 zones: the LED turns on when the corresponding zone

opens and turns off when the zone restores. Each PC4216 module can be assigned to a pre-set group of 16 zones (follow 1-16, follow 17-32, follow 33-48, etc.).

- Custom group of programmable output option choices: a set of 16 programming choices that correspond to the 16 programmable outputs on each PC4216 module. Example: a PC4216 is assigned to custom group (01), in which output (05) is programmed as output option (22), zone follow, for zone (020), which is a fire zone. LED 5 turns on when zone (020) is in alarm and turns off when zone (020) is restored and a fire reset is performed. If you assign a PC4216 module to a custom group, you must also assign an output option to each programmable output in the group. More than one module may follow the same custom group.

Choose one of the three options listed above for each PC4216 in your annunciator, as described below.

#### Programming Suggestions

For easier record keeping and troubleshooting, the following arrangements are suggested for programming PC4216 modules in PC4632 and PC4664 annunciators:

Use the first enrolled module to indicate Zones 1 to 16 and the second enrolled module to indicate Zones 17 to 32 **or** PGM events.

Use the last enrolled module in the PC4664 (the module installed furthest to the left) for PGM events, and use the other modules for zone indications.

For example, if three PC4216 modules are installed in the PC4664, use the first enrolled module to indicate Zones 1 to 16, the second enrolled module to indicate Zones 17 to 32 and the third enrolled module to follow PGM events.

Whether you follow these suggestions or not, be sure to record your programming on the provided programming worksheets!

#### Assign a Zone Group or Custom Group

1. Enter ref # [000703] OR scroll to System Area, press [\*], PGM Outputs, press [\*], then 4216 Options, press [\*].
2. Scroll through the list of PC4216 modules to choose the one you want to program (01-09). Press [\*].
3. Scroll through the available options to choose a) alarm annunciation for a group of zones, b) zone follower annunciation for a group of zones, or c) a custom group. Press [\*] to select.
4. To exit, press [#].

#### Program a Custom Group

If you have assigned a PC4216 module to a custom group, you need to program the 16 outputs in the group.

1. Enter ref # [000704] OR scroll to System Area, press [\*], PGM Outputs, press [\*], then 4216 Custom, press [\*].

2. Scroll to the custom group you want to program (01-09). Press [\*].
3. Enter the number of the output to be programmed (01-16).
4. Enter the number of the output option to be used for that output. Refer to your system's Programming or Installation manual for descriptions of the available programmable output options.
5. To exit, press [#].

### **4.3 Testing the PC4632/64**

When you have completed wiring and programming the annunciator, you should test the LEDs to make sure that they are working correctly. If you have enabled the lamp test option on the PC4216 modules, you can conduct a lamp test.

1. Enter [\*][6][access code][8]
2. The LEDs on the PC4216 modules with the lamp test option enabled turn on for xx
3. To exit the lamp test, press [#].

If the user will be conducting lamp tests, explain to them how to do this.

# Programming Worksheets

## S e c t i o n 5

### [0002] Enroll Module

Record the module numbers of the PC4216 modules in your PC4632 annunciator here:

The diagram shows a rectangular panel with four corner screws. It contains two identical module slots stacked vertically. Each slot has a label 'PC4216 module number: \_\_\_ (01-09)' and a horizontal bar with a repeating pattern below it. To the right of the slots is a large circle.

Record the module numbers of the PC4216 modules in your PC4664 annunciator here:

The diagram shows a rectangular panel with four corner screws. It contains four identical module slots stacked vertically. Each slot has a label 'PC4216 module number: \_\_\_ (01-09)' and a horizontal bar with a repeating pattern below it. To the right of the slots are two large circles.

### [000703] PC4216 Options (see section 4.2)

Record your programming choice for each PC4216 module here. See module options below.

Module Number	Option	Module Number	Option	Module Number	Option
01	___	04	___	07	___
02	___	05	___	08	___
03	___	06	___	09	___

#### PC4216 Module Options

[01] Custom Group 1	[06] Custom Group 6	[11] Alarms 17-32	[16] Alarms 97-112*	[21] Follow 49-64
[02] Custom Group 2	[07] Custom Group 7	[12] Alarms 33-48	[17] Alarms 113-128*	[22] Follow 65-80*
[03] Custom Group 3	[08] Custom Group 8	[13] Alarms 49-64	[18] Follow 1-16	[23] Follow 81-96*
[04] Custom Group 4	[09] Custom Group 9	[14] Alarms 65-80*	[19] Follow 17-32	[24] Follow 97-112*
[05] Custom Group 5	[10] Alarms 1-16	[15] Alarms 81-96*	[20] Follow 33-48	[25] Follow 113-128*

\*PC4020 options only

[000704XXYY]

PC4216 Custom

NOTE: XX = custom group # (Enter 01 - 09); YY = output # (Enter 01-16)

See your system's Installation or Programming Manual for a list of valid output options.

Custom Group 01

No. Output	Partition								Zone	Schedule #	Pulse Timer
	1	2	3	4	5	6	7	8			
01											
02											
03											
04											
05											
06											
07											
08											

Custom Group 02

01										
02										
03										
04										
05										
06										
07										
08										

Custom Group 03

01										
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03										
04										
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06										
07										
08										

Custom Group 04

01										
02										
03										
04										
05										
06										
07										
08										

No. Output	Partition								Zone	Schedule #	Pulse Timer
	1	2	3	4	5	6	7	8			
09											
10											
11											
12											
13											
14											
15											
16											

09										
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