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AUTOKEY SYSTEM PROGRAMMING GUIDE

CHAMBERLAIN®
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SECTION 1
SYSTEM OVERVIEW

This section contains a description of the AUTOKEY's components and features to help you better understand the system.

MULTI-FUNCTION TRANSMITTERS: There are two types of transmitters: the one-button transmitter and the two-button transmitter. The one-button transmitter will only allow the user to activate the relay(s) you program.

A two-button transmitter can be programmed for the left-hand button to activate any relays desired, but the right-hand button will always activate relay 2 and both buttons pressed simultaneously will always activate relay 3.

TIME ZONES: The system can be programmed to restrict the days and/or times that a transmitter is valid. For example, if you only want to allow access to the gardener between the hours of 8 A.M. and 5 P.M. Monday through Friday, you can set up a time zone for those days and hours and assign that time zone to the gardener's transmitter.

AUTOMATIC RELAY ACTIVATION SCHEDULES: The system can be programmed to automatically open and close any gate (or other device attached to the relays) at specified times, plus up to 10 "holidays" where the Automatic Relay Activation Schedule is superceded. For example, if your schedule is set to open the main gate Monday through Friday at 9 A.M. and close it at 5 P.M., but you want the gate to remain closed on holidays, you can program the dates on which you wish the gate to remain closed.

DIRECT RELAY CONTROL: The system's relays can also be controlled from the programming keypad. This feature allows you to activate the system's relays, either for a programmed period of time or until you manually deactivate the relays.

PRINTING THE EVENT RECORD: The AUTOKEY has the ability to print a log of the system's events in real-time if a printer is attached to the system (i.e., denying access to an invalid transmitter number). The unit does not store transactions for future printing.

SECTION 2
PROGRAMMING OVERVIEW

In the sections that follow, detailed procedures are discussed for each step in programming the AUTOKEY system. In addition to these specific procedures, there are a number of general hints and rules that will help ensure that your programming is done correctly and efficiently.

1. **SIMPLE KEYPAD PROGRAMMING.** All programming is done through the system's keypad, which is located inside the AUTOKEY enclosure mounted on the controller board.

2. **ENTER PROGRAMMING MODE.** The first step in programming the system is to enter programming mode. The factory default password to enter programming mode is six zeroes (000000). Once you are in programming mode, the system will remain in this mode until you tell it to exit to the "run" mode, or until 60 seconds pass without an entry on the keypad. When in the program mode, the system will display a "P" on the seven-segment display.

   How to ENTER Program Mode: "✳✳✳" + 000000 (6 digits)

   How to EXIT Program Mode: 00 + "#"

3. **WATCH THE DISPLAY CODES.** The AUTOKEY system provides visual feedback as you program. If you make an error, the system will display the following:

CODE	DESCRIPTION
E1	The entry you are trying to erase or verify does not exist in the system.
E2	You have tried to enter a transmitter that already exists in the system's memory.
E3	The system's memory is full.
E4	You have made a format error in your entry.

Table 1: Program Mode Error Codes

4. **RECORD TRANSMITTER NUMBER ASSIGNMENTS.** Keep track of what transmitter numbers have been entered into the system and to whom they have been assigned. This will allow you to void a transmitter if necessary.

5. **ABORTING A TRANSACTION ERROR.** If you realize in the middle of an entry that a mistake was made, you can abort the transaction by entering a "✳".

SECTION 3
TIME ZONES AND HOLIDAYS

1. SET THE SYSTEM DATE AND TIME

The AUTOKEY contains an internal clock calendar that automatically keeps time and adjusts for leap year, but does not adjust for daylight savings time. The calendar is also used for scheduling functions, history transactions, and transmitter access privileges.

Format 06 + yy + mm + dd + hh + mn + day of week + "#"

yy = year; mm = month; dd = current date; hh = hour; mn=minute

Hour and minutes are entered in twenty-four hour format; For example, the time of 7:20 PM is entered "1920"; the hour for 7:20 PM is entered "19"; the minutes are entered "20".

Days:	1 = Sunday	3 = Tuesday	5 = Thursday	7 = Saturday
	2 = Monday	4 = Wednesday	6 = Friday	

Example: 06 + 03 + 08+ 09 + 15 + 30 + 5 + #
(sets clock to 2003, August 9, 3:30 p.m. on Thursday.

2. VERIFY CURRENT CLOCK SETTING

The system will display the current date and time in the same format it was entered: 2 digits for the year, 2 digits for the month, 2 digits for the day, 4 digits for the time, and 1 digit for the day of the week.

Format 06 + "#"

3. DEFINE HOLIDAYS

Sets the dates the unit will treat as holidays in assessing time zones and automatic relay activation schedules. This ensures the gates will remain closed all day on holidays or other days when normal conditions do not apply.

Format 08 + holiday number + mm + dd + "#"

Example 08 + 1 + 01 + 01 + # (sets up holiday number 1 for January 1st).

- Holiday range is from 0-9.
- mm = month; dd = date

4. VERIFY A HOLIDAY SCHEDULE

Format 08 + holiday number (1 digit) + "#"

5. ERASE A HOLIDAY SCHEDULE

Format 08 + holiday number + 99 + "#"

6. CREATE TIME ZONES

Time zones allow you to restrict transmitter access to certain times of certain days (e.g., the gardener's transmitter works only when he is supposed to be in your complex). The system supports 7 restricted time zones, each with 2 separate time "segments" and includes a time zone (0) which is factory set for 24 hours, 7 days a week, plus holidays. Holidays may be included or excluded from the restricted time zones. If excluded, any date designated as a holiday will not be included as part of the time zone, even if it falls on a day that would otherwise be included.

Format 07 + zone number (1 digit) + segment number (1 digit) + start time (4 digits) + end time (4 digits) + day of the week (1 to 8 digits) + "#"

Time zone numbers range from 0 to 7 with two segments for each time zone (numbered 1 or 2).

Start time and end time is entered in 4-digit format. For example, the starting time of 7:20 PM is entered "1920".

Days:	1 = Sunday	3 = Tuesday	5 = Thursday	7 = Saturday
	2 = Monday	4 = Wednesday	6 = Friday	8 = Holidays

To erase a time zone segment, enter "99" for the starting time and then the "#" key. For example, if you wanted to erase time zone 2 segment 1, the entry would be "07+2+1+99+ #".

Example 07 + 1 + 1 + 0800 + 1700 + 2 3 4 5 6 8 + #

(This sets segment 1 of time zone 1 for the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday and Holidays).

A. To set up a time zone that extends past midnight and into the next day, create one segment that runs until midnight (for example:, 8 PM to 11:59 PM) and a second segment that starts at midnight on the following days (for example:, 12 AM to 4 AM).

B. For a time zone to be valid on holidays it must also be valid for a day of the week. For example, if January 1st is set as a holiday and lands on a Friday, the time zone must be valid for Fridays and Holidays for the transmitter to be valid. If a time zone is set to be valid only on holidays and not the day of the week where the holiday falls, the transmitter will be considered invalid and will not grant access.

7. VERIFY A TIME ZONE SEGMENT

Format 07 + time zone number (1 digit) + segment number (1 digit) + "#"

8. ERASE TIME ZONES

Format 07 + zone number (1 digit) + segment number (1 digit) + 99 + "#"

SECTION 4
RELAY ACTIVATION TIMES

The activation time is the duration the relay will remain activated when an access granted condition occurs.

1. SET THE RELAY ACTIVATION TIME(S)

The factory default setting is 2 seconds. Valid time range is between 2 and 250 seconds.

Format Relay 1: 01 + number of seconds (up to 3 digits) + "#"
Relay 2: 02 + number of seconds + "#"
Relay 3: 03 + number of seconds + "#"

Example 01 + 25 + "#" (sets the activation time for relay 1 to 25 seconds).

2. VERIFY RELAY ACTIVATION TIMES

Displays the number of seconds each relay is scheduled to activate for when access granted condition occurs.

Format Relay 1: 01 + "#"
Relay 2: 02 + "#"
Relay 3: 03 + "#"

3. SET THE AUTOMATIC ACTIVATION SCHEDULE(S)

Programs the system to automatically open and close an electric gate (or control other relay functions) at specified times. Up to three schedules can be programmed for each relay. For example, a gate can be programmed to open at 8 AM and close at 5 PM on weekdays, but only be open from 8 AM to 12 noon on Saturdays.

Format Relay 1**:** 11+ segment number (1 digit) + activation time (4 digits) + deactivation time (4 digits) + days of the week (up to 8 digits) + "#"

Relay 2**:** 12 + segment number + activation time + deactivation time + days of week + "#"

Relay 3**:** 13 + segment number + activation time + deactivation time + days of week + "#"

A. Segment range is 1 to 3.

B. The activation and deactivation times must be entered as 4 digits and in 24-hour format. For example, 5:00 am would be entered as "0500" and 5:00 PM would be entered as "1700".

C. Days:

1 = Sunday	3 = Tuesday	5 = Thursday	7 = Saturday
2 = Monday	4 = Wednesday	6 = Friday	8 = Holidays

D. If a day has been programmed as a holiday, but you want the normal relay activation schedule, the day of the week where the holiday lands, and the holiday option, must be programmed. For example, if Monday is a programmed holiday, but you want the normal schedule, enter "Monday" and "Holiday" in the days of the week area.

Example 11 + 2 + 0800 + 1700 + 23456 + #

(sets relay 1, segment 2 to open at 8:00 AM and close at 5:00 PM Monday through Friday).

4. VERIFY AN AUTOMATIC RELAY ACTIVATION SCHEDULE

Format Relay 1: 11 + segment number (1 digit) + "#"
Relay 2: 12 + segment number + "#"
Relay 3: 13 + segment number + "#"

A. The segment number can be between 1 and 3.

B. Automatic relay activation schedule data is displayed as follows: 4 digits for the start time, 4 digits for the end time, eight digits for the day. For example, if segment 1 opens at 8:00 AM and closes at 5:00 PM Monday thru Friday, the system displays: "0800170023456".

5. ERASE AN AUTOMATIC ACTIVATION SCHEDULE

Format Relay 1**:** 11 + segment number (1 digit) + 99 + "#"
Relay 2**:** 12 + segment number + 99 + "#"
Relay 3**:** 13 + segment number + 99 + "#"

SECTION 5
SECURITY FEATURES

1. CHANGE THE PASSWORD

Changing the default password ensures no unauthorized entry. After changing the password, it is imperative that you verify the new code before exiting the program mode, since a mistake will prevent you from entering the program mode again.

Format 09 + new password (6 digits) + "#"

Example 09 + 123456 + #

2. VERIFY THE PASSWORD

You should perform this step after changing the access code, but ***before*** you exit the program mode to ensure proper password setting.

Format 10 + password (6 digits) + "#"

Example 10 + 123456 + #

A. If a "0" is displayed on the 7-segment display, the password is correct.

B. If an "E1" error code is displayed, the password is incorrect, and you should either re-verify the password or change it ***before*** you exit the program mode.

SECTION 6
TRANSMITTERS

This section describes how to add transmitters to the system. These programming steps will be repeated frequently as people move in and out of your building/complex.

1. ENTER A SINGLE TRANSMITTER

Enter a single transmitter number which can be restricted to the days, times, and gates it will operate.

Format 21 + relay code (1 digit) + time zone (1 digit) + transmitter number (up to 7 digits) + "#"

A. The relay code determines which relay(s) to activate when a single-button or the left button of a two-button transmitter is pressed.

1 = relay 1 only	4 = relays 1 and 2	7 = all 3 relays
2 = relay 2 only	5 = relays 1 and 3	
3 = relay 3 only	6 = relays 2 and 3	

B. You must always enter a time zone, even if no restricted zones have been created. Time zone "0" will allow access at anytime.

C. The transmitter number is the code emitted by the transmitter when a button is pressed. The code is seven digits in length, but if the digits preceding a number are zeroes (i.e. 0000007), it is not necessary to enter the leading zeros.

Example 21 + 4 + 0 + 567 + #

(sets up transmitter number 567 to activate relays 1 and 2 anytime).

2. ENTER A GROUP OF TRANSMITTERS

Bulk load a group of transmitters with the same time zone and gate access rights in one easy step rather than loading each transmitter individually. If you re-enter a transmitter that was already programmed in the system, the AUTOKEY will over-write the previously entered information with the new data.

Format 22 + relay code (1 digit) + time zone (1 digit) + beginning transmitter number (7 digits) + ending transmitter number (7 digits) + "#"

A. The relay code determines which relay(s) to activate when a single-button or the left button of a two-button transmitter is pressed.

1 = relay 1 only	4 = relays 1 and 2	7 = all 3 relays
2 = relay 2 only	5 = relays 1 and 3	
3 = relay 3 only	6 = relays 2 and 3	

B. You must always enter a time zone even if no restricted zones have been created. Time zone "0" will allow access at anytime.

C. <u>The beginning and ending transmitter numbers must be entered as 7 digits</u>.

Example 22 + 7 + 0 + 0000008 + 0000057 + #

(sets up transmitters between the numbers 0000008 and 0000057 to be valid at anytime and at all 3 relays).

3. VERIFY A TRANSMITTER IN THE SYSTEM

This feature allows you to verify if a transmitter is programmed into the system and to review its configurations.

Format 18 + transmitter number (up to 7 digits) + "#"

After entering a transmitter number for verification, the system will display a (4) four-digit code; see below.

Digit 1: Relay 1 (1 = active; 0 = inactive)
Digit 2: Relay 2 (1 = active; 0 = inactive)
Digit 3: Relay 3 (1 = active; 0 = inactive)
Digit 4: Time Zone

If a transmitter *is* programmed to open a relay, the system will display a "1".
If the transmitter *is not* programmed to activate a relay, the system will display a "0".
If an "E1" error code is displayed, the transmitter number is not valid in the system.

Example 18 + 1234567 + #
(If system displays "1104, then the transmitter number 1234567 is programmed to open relays 1 and 2 and has time zone 4. Relay 3 will not open with the transmitter).

4. DELETE A SINGLE TRANSMITTER

Format 23 + transmitter number (up to 7 digits) + "#"

5. DELETE ALL TRANSMITTERS

Format 24 + 101010 + "#"

6. DETERMINE A TRANSMITTER NUMBER

Allows you to confirm the factory-assigned number that has been given to a transmitter. This process requires the system to be in the "test" mode.

1. Locate switch S1 on the controller board. Set switch S1-1 to the "ON" position.
2. Point the transmitter at the controller and press the button (the left-hand button on a two-button transmitter). The seven-digit factory-assigned transmitter number will appear on the 7-segment display. Repeat this step for each transmitter you wish to verify.
3. After verifying the transmitters, reset switch S1-1 back to the "OFF" position.
4. Close and lock the cabinet door.

SECTION 7
DIRECT RELAY CONTROL

This section describes how to directly control the system's three relays. Once you have entered the programming mode, relay control is accomplished by entering a code at the programming prompt.

1. TIMED RELAY ACTIVATION

You can manually activate the relays for the programmed relay activation time.

Format

RELAY 1: 91 + "#"
RELAY 2: 92 + "#"
RELAY 3: 93 + "#"

Example

92 + "#"
(activates relay 2 for the programmed period of time).

2. SUSTAINED RELAY ACTIVATION

Manually activate the relays until released manually by the operator/user.

Format

LATCH RELAY 1:	94 + "#"	RELEASE RELAY 1:	91 + "#"
LATCH RELAY 2:	95 + "#"	RELEASE RELAY 2:	92 + "#"
LATCH RELAY 3:	96 + "#"	RELEASE RELAY 3:	93 + "#"

Example

95 + # (to latch relay 2) and 92 + # (to release relay 2).

After entering 91, 92, or 93 and the "#" sign to release the latched relay, the relay will deactivate after the programmed relay activation time has elapsed.

SECTION 8
OTHER SPECIAL FUNCTIONS

1. SET THE PRINTER BAUD RATE

The baud rate is the speed of communication between the AUTOKEY and your printer. If you do not have a computer or printer connected to your system, there is no need to make this entry.

Format 05 + baud rate number (1 digit) + "#"

A. Factory default setting is 2400 baud.

B. The baud rates are numbered as follows: 0=300 baud, 1=1200 baud, 2=2400 baud, 3=4800 baud, and 4=9600 baud.

Example 05 + 3 + #

(sets the baud rate to 4800)

2. VERIFY PRINTER BAUD RATE

The system will display the baud rate currently programmed into the system, not the baud rate *number* you used to program the system. For example, if you entered "05 + 1 + #" into the system, it will display "1200" (not "1") as the current baud rate setting.

Format 05 + "#"

3. DISPLAY REMAINING TRANSMITTER CAPACITY

After the "#" key is pressed the system will display the number of openings available for new transmitter numbers.

Format 25 + "#"

4. RESET THE SYSTEM

Resetting the system will unlatch all doors and relays (timed or untimed) that were manually latched prior to system reset. These door/relays must be reprogrammed to relatch.

Format 19 + "#"

5. RESTORE FACTORY SETTINGS

Use this step to restore the AUTOKEY to factory defaults (except step 6).

Format 20 + 101010 + “#”

STEP	PURPOSE	FACTORY SETTING
01	Relay 1 activation time	2 seconds
02	Relay 2 activation time	2 seconds
03	Relay 3 activation time	2 seconds
05	Printer baud rate	2400 baud
07	Time zones	Disable all time zones
08	Holiday schedules	Disable all holiday schedules
09	Password	000000
11	Relay 1 automatic relay activation schedules	Disable all schedules
12	Relay 2 automatic relay activation schedules	Disable all schedules
13	Relay 3 automatic relay activation schedules	Disable all schedules

Table 2: Factory Settings

APPENDIX
THE PROGRAMMING MENU

STEP	DESCRIPTION	FORMAT	SEE PAGE
---	Enter Programming Mode	✳✳✳ + (6-digit password)	4
00	Exit Programming Mode	00 + #	4
01	Set Activation Time for Relay 1	01 + number of seconds (up to 3 digits) + #	7
	Verify Activation Time for Relay 1	01 + #	7
02	Set Activation Time for Relay 2	02 + number of seconds (up to 3 digits) + #	7
	Verify Activation Time for Relay 2	02 + #	7
03	Set Activation Time for Relay 3	03 + number of seconds (up to 3 digits) + #	7
	Verify Activation Time for Relay 3	03 + #	7
05	Set Printer Baud Rate	05 + baud rate number (1 digit) + #	13
	Verify Printer Baud Rate	05 + #	13
06	Set the System Date and Time	06 + yy + mm + dd + hh + mn + day of week + #	5
	Verify Current Clock Setting	06 + #	5
07	Create Time Zones	07 + time zone number (1 digit) + segment number (1 digit) + start time (4 digits) + end time (4 digits) + day of the week (1 to 8 digits) + #	6
	Erase Time Zones	07 + time zone number (1 digit) + segment number (1 digit) + 99 + #	6
	Verify a Time Zone Segment	07 + time zone number	6
08	Define Holidays	08 + holiday number + mm + dd + #	5
	Verify a Holiday Schedule	08 + holiday number + #	5
	Erase a Holiday Schedule	08 + holiday number + 99 + #	5
09	Change the Password	09 + new password (6 digits) + #	9
10	Verify the Password	10 + password (6 digits) + #	9
11	Set Automatic Activation Schedule for Relay 1	11 + segment number (1 digit) + activation time (4 digits) + deactivation time (4 digits) + days of the week (up to 8 digits) + #	7
	Erase Automatic Activation Schedule for Relay 1	11 + segment number (1 digit) + 99 +#	8
	Verify Automatic Activation Schedule for Relay 1	11 + segment number (1 digit) + #	8
12	Set Automatic Activation Schedule for Relay 2	12 + segment number (1 digit) + activation time (4 digits) + deactivation time (4 digits) + days of the week (up to 8 digits) + #	7
	Erase Automatic Activation Schedule for Relay 2	12 + segment number (1 digit) + 99 +#	8
	Verify Automatic Activation Schedule for Relay 2	12 + segment number (1 digit) + #	8
13	Set Automatic Activation Schedule for Relay 3	13 + segment number (1 digit) + activation time (4 digits) + deactivation time (4 digits) + days of the week (up to 8 digits) + #	7
	Erase Automatic Activation Schedule for Relay 3	13 + segment number (1 digit) + 99 +#	8
	Verify Automatic Activation Schedule for Relay 3	13 + segment number (1 digit) + #	8
18	Verify a Transmitter in the System	18 + transmitter number (up to 7 digits) + #	11
19	Reset the System	19 + #	13
20	Restore Factory Settings	20 + 101010 + #	14

STEP	DESCRIPTION	FORMAT	SEE PAGE
21	Enter a Single Transmitter	21 + relay code (1 digit) + time zone (1 digit) + transmitter number (up to 7 digits) + #	10
22	Enter a Group of Transmitters	22 + relay code (1 digit) + time zone (1 digit) + beginning transmitter number (7 digits) + ending transmitter number (7 digits) + #	10
23	Delete a Single Transmitter	23 + transmitter number (up to 7 digits) + #	11
24	Delete All Transmitters	24 + 101010 + #	11
25	Display Remaining Transmitter Capacity	25 + #	13
91	Timed Activation for Relay 1 Release Relay 1 from Latch State	91 + #	12
92	Timed Activation for Relay 2 Release Relay 2 from Latch State	92 + #	12
93	Timed Activation for Relay 3 Release Relay 3 from Latch State	93 + #	12
94	Latch Relay 1	94 + #	12
95	Latch Relay 2	95 + #	12
96	Latch Relay 3	96 + #	12

Table 3: The Programming Menu