

## Time Restricted Access

The C105 Keypad has a pair of terminals marked 'TIME' which can be connected to an external Time Clock or Key switch to control time-restricted access. Any switch contact must be fully isolate (i.e. voltage free), refer to 'Optional Components' at the front of this manual for a suitable Time Clock.

Access code may be programmed as follows:

| Access         | Time Switch Status | Usage           |
|----------------|--------------------|-----------------|
| No Restriction | -                  | Executive       |
| Zone 1         | Contact Closed     | Staff (shift 1) |
| Zone 2         | Contact Open       | Staff (shift 2) |

## Exit Button

The terminal marked 'EXIT' may be connected to an external push-button (e.g. M5077 switch) for 'push to exit' operation. Momentarily operating this button will directly operate the lock release for the programmed duration.

Alternatively, the input may be used with a Fireman's Override keyswitch, which should be of the normally-open type. If this feature is to be used it is important that the lock release be of a continuously-rated design.

In general, a switch connected to the 'EXIT' terminals should be fully isolated i.e. voltage-free.

## Programming the C106 Keypad

### General

The 10 access codes, lock time etc, are all programmed via the keypad. To prevent unauthorised use, a security key (1 - 8 digits) must be entered.

The basic principle of programming is as follows:

#### Procedure

- ◆ Enter the security key (1 to 8 digit number).
- ◆ Enter a key sequence on the keypad.
- ◆ Observe both the red and green LEDs flash for one second.
- ◆ When all functions are programmed, exit program mode by pressing **\*\***.

Each program function is described in detail on the following pages.

## Changing the Security key (Function 91)

The security key is the code that must be entered on the keypad to gain access to program mode.

The security key is factory set to **1212**, to maintain security we recommend that this be changed immediately.

To ensure an adequate level of security it is recommended that a minimum of 4 digits be used for the security key, giving 10,000 combinations.

### Procedure

- ◆ Enter the current security key.
- ◆ Type :  
**91 \* <New Key> #**
- ◆ Both LEDs flash once
- ◆ Exit program mode by pressing **\*\***

Example

**91 \* 87305 #**  
(security key = 87305)

Factory Setting = 1212

## Programming a New Access Codes (Functions 1 to 10)

The C106 Keypad has ten access codes. Each code may be between 1 to 8 digits long.

### Procedure

- ◆ Enter the security key.
- ◆ Type  
**< 1 - 10 > \* <New Code> #**
- ◆ Both LEDs flash once
- ◆ Exit program mode by pressing **\*\***

Examples

**1 \* 7754 #**  
(code 1 = 7754)

**5 \* 8652 #**  
(code 5 = 8652)

### Choosing an access code

To ensure an adequate level of security it is recommended that a minimum of 4 digits be used for each access code, giving 10,000 combinations. Codes should be chosen carefully to avoid obvious sequences and repetitions (e.g. 12345, 258, 4444) which may be easily guessed or discovered. Try to choose codes with a random appearance (e.g. 6149, 186403) and avoid telephone numbers and other meaningful codes which, again, may be guessed by a would-be intruder. It is also a good idea to regularly change the access codes.

When choosing access codes it is important that no code is a subset of another code, e.g. If code 1 = 234 and the code 2 = 12345, code 2 would never open the door as 234 is a subset of 12345.

### Maintenance

It is important also that the keypad be regularly cleaned to remove finger marks which may give clues as to the access code. Use a soft cloth moistened with dilute detergent. Do not use organic solvents or any other cleaner.

### Programming the Action Codes (Functions 51 to 60)

Each access code has an associated action number. This is a single digit from 0-3 which determines the action that occurs following the entry of that access code.

Function 51 - Code 1 action code.

Function 52 - Code 2 action code.

⋮

Function 60 - Code 10 action code.

### Summary of Action Codes

| Code | Action                                                  |
|------|---------------------------------------------------------|
| 0    | No action ( code is disabled)                           |
| 1    | Lock operates                                           |
| 2    | Lock operates only if Time contacts are closed (Zone 1) |
| 3    | Lock operates only if Time contacts are open (Zone 2)   |

**Procedure**

- ◆ Enter the security key.
- ◆ Type :  
    <51 - 60> \* <Action No> #
- ◆ Both LEDs flash once
- ◆ Exit program mode by pressing \*\*

**Example****51 \* 1 #**

Code 1:Act No=1  
(Operate lock always)

| No            | Function                           | Key Sequence                   | Factory Setting                       |
|---------------|------------------------------------|--------------------------------|---------------------------------------|
| 51            | Code 1 Action Number               | <b>51 * &lt;0-3&gt; #</b>      | 1 (Operate always)                    |
| 52            | Code 2 Action Number               | <b>52 * &lt;0-3&gt; #</b>      | 2 (Zone 1 - Operate when Time closed) |
| 53<br>-<br>60 | Code 3 to Code 10<br>Action Number | <b>53 - 60 * &lt;0-3&gt; #</b> | 0 (Disabled)                          |

**Programming The Lock Duration (Function 95)**

This is the duration the lock release will operate for when triggered by an access code or by the 'EXIT' input. It is programmable in the range 1-99 seconds.

**Procedure**

- ◆ Enter the security key.
- ◆ Type :  
    **95 \* <1-99> #**
- ◆ Both LEDs flash once
- ◆ Exit program mode by pressing \*\*

**Example****95 \* 7 #**

(7 seconds)

**95 \* 12 #**

(12 seconds)

Factory Setting = 3 seconds

## Programming a Lock Delay Time (Function 96)

This function causes a delay (0-99 seconds) to be introduced between the triggering of the lock release and its operation. Typically, this facility is used when the keypad is located some distance from the entrance.

### Procedure

- ◆ Enter the security key.
- ◆ Type : **96 \* <0-99> #**
- ◆ Both LEDs flash once
- ◆ Exit program mode by pressing **\*\***

Example

**96 \* 3 #**  
(3 second delay)

Factory Setting = 0 seconds

## Programming the Factory Settings (Function 99)

In the event of any problems, always return to Factory settings.

### Procedure

- ◆ Enter the security key.
- ◆ Type : **99 \* #**
- ◆ Both LEDs flash once
- ◆ Exit program mode by pressing **\*\***

If you have forgotten the security key see 'Programming the Factory Defaults Using the Test Button' page 30

| No      | Function                    | Factory Setting              |
|---------|-----------------------------|------------------------------|
| 1       | Program Code 1              | 1 2 3 4 5                    |
| 2       | Program Code 2              | 6 7 8 9 0                    |
| 3 - 10  | Program Codes 3 to 10       | Disabled                     |
| 51      | Code 1 Action Number        | 1 (Operate always)           |
| 52      | Code 2 Action Number        | 2 (Operate when Time closed) |
| 53 - 60 | Code 3 to 10 Action Numbers | 0 (Disabled)                 |
| 91      | Security key                | 1 2 12                       |
| 95      | Lock Duration               | 3 seconds                    |
| 96      | Lock Delay                  | 0 (Disabled)                 |

## Summary of Program Functions

**Table 1 - Programming Access Codes**

| No. | Function        | Key sequence                     | Factory Setting |
|-----|-----------------|----------------------------------|-----------------|
| 1   | Program Code 1  | <b>1 * &lt;1-8 digits&gt; #</b>  | 1 2 3 4 5       |
| 2   | Program Code 2  | <b>2 * &lt;1-8 digits&gt; #</b>  | 6 7 8 9 0       |
| 3   | Program Code 3  | <b>3 * &lt;1-8 digits&gt; #</b>  | Disabled        |
| 4   | Program Code 4  | <b>4 * &lt;1-8 digits&gt; #</b>  | Disabled        |
| 5   | Program Code 5  | <b>5 * &lt;1-8 digits&gt; #</b>  | Disabled        |
| 6   | Program Code 6  | <b>6 * &lt;1-8 digits&gt; #</b>  | Disabled        |
| 7   | Program Code 7  | <b>7 * &lt;1-8 digits&gt; #</b>  | Disabled        |
| 8   | Program Code 8  | <b>8 * &lt;1-8 digits&gt; #</b>  | Disabled        |
| 9   | Program Code 9  | <b>9 * &lt;1-8 digits&gt; #</b>  | Disabled        |
| 10  | Program Code 10 | <b>10 * &lt;1-8 digits&gt; #</b> | Disabled        |

**Table 2 - Programming of Action Codes**

| No | Function              | Key Sequence              | Factory Setting              |
|----|-----------------------|---------------------------|------------------------------|
| 51 | Code 1 Action Number  | <b>51 * &lt;0-3&gt; #</b> | 1 (Operate always)           |
| 52 | Code 2 Action Number  | <b>52 * &lt;0-3&gt; #</b> | 2 (Operate when Time closed) |
| 53 | Code 3 Action Number  | <b>53 * &lt;0-3&gt; #</b> | 0 (Disabled)                 |
| 54 | Code 4 Action Number  | <b>54 * &lt;0-3&gt; #</b> | 0 (Disabled)                 |
| 55 | Code 5 Action Number  | <b>55 * &lt;0-3&gt; #</b> | 0 (Disabled)                 |
| 56 | Code 6 Action Number  | <b>56 * &lt;0-3&gt; #</b> | 0 (Disabled)                 |
| 57 | Code 7 Action Number  | <b>57 * &lt;0-3&gt; #</b> | 0 (Disabled)                 |
| 58 | Code 8 Action Number  | <b>58 * &lt;0-3&gt; #</b> | 0 (Disabled)                 |
| 59 | Code 9 Action Number  | <b>59 * &lt;0-3&gt; #</b> | 0 (Disabled)                 |
| 60 | Code 10 Action Number | <b>60 * &lt;0-3&gt; #</b> | 0 (Disabled)                 |

**Table 3 - Summary of Action Numbers**

| Code | Action                                                  |
|------|---------------------------------------------------------|
| 0    | No action ( code is disabled)                           |
| 1    | Lock operates                                           |
| 2    | Lock operates only if Time contacts are closed (Zone 1) |
| 3    | Lock operates only if Time contacts are open (Zone 2)   |

**Table 4 - Programming of Other Functions**

| No | Function                 | Key Sequence        | Factory Setting |
|----|--------------------------|---------------------|-----------------|
| 91 | Security key             | 91 * <1-8 digits> # | 1 2 12          |
| 95 | Lock Duration            | 95 * <1-99 secs> #  | 3 seconds       |
| 96 | Lock Delay               | 96 * <0-99 secs> #  | 0 (Disabled)    |
| 99 | Program Factory Settings | 99 * #              |                 |

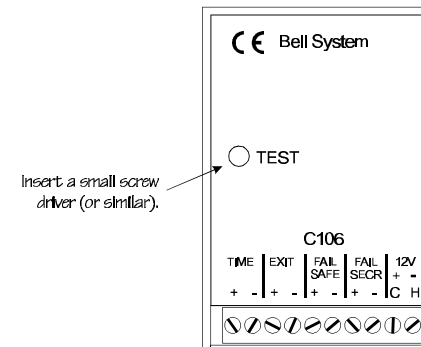
## Commissioning

After installation of the C106 unit, follow the two test procedures below; any problems can be diagnosed from the troubleshooting section. Finally program the required security and access codes (page 15).

### Testing The Lock Release Outputs

Ensure that the lock release is connected to the correct output (as shown in the Wiring diagram on page 7).

**Press and hold the C106 Keypad TEST button:**



! Both of the Lock Outputs (Fail-Safe and Fail-Secure) and both red and green LEDs will illuminate.

! After 5 seconds the LEDs will start to alternate and the lock output will stop operating; you should release the test button at this stage to avoid programming the factory settings (see page 30).

## Testing the controller with factory settings

Before proceeding with this test ensure that the lock release is working correctly by following the tests on page 26.

Program to factory settings by following the instructions on page 22, 30.

- ◆ Type in code 1 (**1 2 3 4 5**) - this should operate the lock release for 3 seconds.
- ◆ If a time clock is present on the system, manually switch it to OFF and type code 2 (**6 7 8 9 0**), nothing should happen. Now manually switch the time clock to ON and retype code 2 (**6 7 8 9 0**) - the lock release should operate for 3 seconds.
- ◆ Reprogram code 1 to another value by following the instructions under the heading 'Programming new access codes' (page 15); check that the new code operates the lock release and that the old one does not.
- ◆ If everything is functioning correctly, reprogram the security key (factory set to **1212**), to maintain security.
- ◆ Reprogram access codes, action codes and other parameters as required (pages 14 to 22).

## Troubleshooting

Use the table below to determine the most probable cause of a fault condition.

| Symptom                                                                    | Possible Cause/Remedy                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| When power applied nothing happens (LEDs do not flash)                     | <ul style="list-style-type: none"> <li>● Power Supply is overloaded. Remove externally connected components until the fault disappears.</li> <li>● Polarity not correct. Measure the voltage at the C106 (+ , -)</li> <li>● Check Power Supply Fuses. Always replace with fuses of the correct type and rating.</li> </ul> |
| Lock release operates in reverse                                           | <ul style="list-style-type: none"> <li>● Incorrect output has been used; Transpose connections between Fail-safe and Fail-secure outputs.</li> </ul>                                                                                                                                                                       |
| Red and Green LEDs flash together when attempting to operate lock-release. | <ul style="list-style-type: none"> <li>● Fail-secure Lock release output is short-circuited or of an incorrect rating; temporarily disconnect the lock release and retry (Green LED on for 3 seconds), test lock release (page 26)</li> </ul>                                                                              |

| Symptom                                                                           | Possible Cause/Remedy                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The lock release fails to operate when the Test button is pressed                 | <ul style="list-style-type: none"> <li>● Check the lock release and its wiring by moving the lock connections to + C, -H, (forcing the lock)</li> <li>● Measure the voltage on the FAIL SECR terminals; this should be the same as the power supply (13.8V) while the test button is pressed.</li> </ul> |
| Lock release does not operate when Exit Button is pressed.                        | <ul style="list-style-type: none"> <li>● Test by applying a short-circuit directly to the 'EXIT' terminals; Check connections to Exit button.</li> </ul>                                                                                                                                                 |
| Lock operates from the test button but does not operate when the code is entered. | <ul style="list-style-type: none"> <li>● Check C106 Keypad is correctly programmed; Restore to Factory Settings (page 22, 30);</li> <li>● Time Clock in wrong state; reprogram action code, manually switch the time clock.</li> </ul>                                                                   |
| Lock release is permanently active                                                | <ul style="list-style-type: none"> <li>● 'EXIT' terminals are short-circuited; temporarily remove connections to 'EXIT' and re-test unit.</li> </ul>                                                                                                                                                     |

## Programming the Factory Settings with the Test Button

In the event of any problems, always return to Factory Settings. If the security key has been forgotten, the test button can be used to restore factory settings.

In the case of a fault disconnect the lock release, before following this procedure.

This operation will restore all codes, times and functions to the factory settings (see Table 1 page 23 for the complete list).

This facility is useful for fault diagnosis. It makes use of the Test Button on the C106 Keypad. It is always advisable to return to this condition whenever the unit appears to malfunction during installation or following an unsuccessful programming session.

### To program Factory Settings:

- ◆ Press and hold the TEST button.
- ◆ Observe the red and green LEDs come on (5 seconds).
- ◆ Observe the red and green LEDs alternating (3 seconds).
- ◆ Finally the red and green LED will flash for 1 second and extinguish. The Factory setting are now programmed; release the TEST button.

