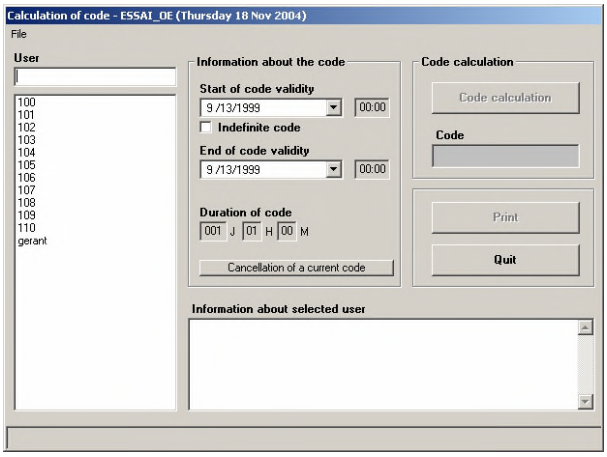
Lock 660 M

Lock 660 E

Lock 660 F



ORACODE 660

After a study on the needs defined by professional users, it was noted that one lock might be used by several people: the customer, staff for room cleaning on the floor of the hotel concerned, maintenance staff, the manager, a technician for a limited time, etc.

A lock that is fitted on the safe will be used by the customer and the manager. Other cases are possible to imagine and lead to the lock being used by several authorised people.

Each of these potential users must therefore have specific rights that can be defined easily. Only the manager will have maximum rights.

This means to say that the lock can be considered as having several sub-locks, all with the same function, but possibly reacting differently. With Oracode locks, 8 sub-locks (meaning 8 independent users at the same time) can be specified recorded).

1) Generalities

1.1 Code generating Software

The code that enables the lock to be opened will have been generated by the manager or the *KABA* technician using *Winkey* that have been installed on a PC.

1.2 Functions integrated in *Oracode-type* locks

These functions have the following undeniable advantages (table 1) :

The code enables the lock to be opened.

The advance enables the use of 1 to 4 different codes for each user profile (customer, staff) for the same period.

Ranges bring together specific properties (lock in free access mode, time period etc.) corresponding to user profiles (customer, cleaning staff, maintenance staff etc.). Eight ranges can be freely configured.

Keys for ranges (like ciphering keys) enable codes to be generated for each range used.

The audit function, which memorises the code entered each time the lock is opened or each unsuccessful attempt to open the lock.

Examples of use

Warehouse doors

Employees: authorised to come and go between 8 a.m. and 4 p.m. – each employee on specific locks.

Maintenance staff: authorised to come and go for 6 hours out of every 22-hour time period, on all locks.

Production manager: full, unlimited authorisation.

Office doors

Employee: authorisation to come and go as they want throughout the whole duration of their stay. Access restricted to this lock only.

Cleaning staff: authorisation to come and go between 10 a.m. and 3 p.m. for selected rooms on the floor concerned.

Maintenance staff: authorisation to come and go between 10 a.m. and 6 p.m. for all rooms.

Managing director: full authorisation

Hall of residence or hotel rooms

Guest or student: authorisation to come and go as they want throughout the whole duration of their stay. Access restricted to this lock only.

Cleaning staff: authorisation to come and go between 10 a.m. and 3 p.m. for selected rooms on the floor concerned.

Maintenance staff: authorisation to come and go between 10 a.m. and 6 p.m. for all rooms.

Managing director: full authorisation.

Hotel Safe lock

Customer: authorised to open and close the safe as much as they want throughout the duration of their stay, on this lock only.

Cleaning staff: no authorisation.

Maintenance staff: no authorisation.

Managing director: full unlimited authorisation (the audit – history function of the safe enables any eventual fraud to be

2) Notions about coding

This part covers all notions concerning coding. Once these factors have been studied, the various options of the *Winkey* coding software will become clearer.

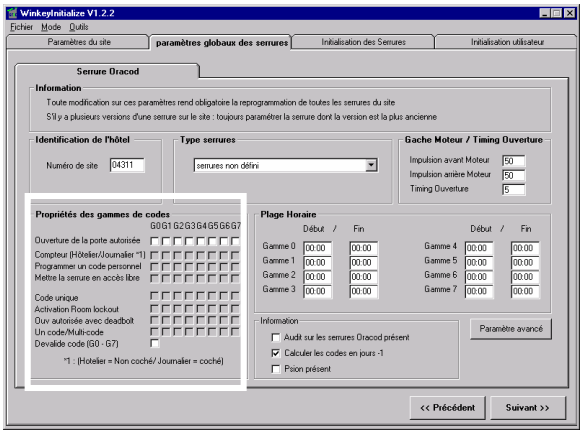


Fig. 1: Copy of a screen in WinkeyInitialize showing the location of the idea of a Range (white zones).

2.1 Ranges

From the *Oracode* point of view, all users (customers, cleaning staff etc.) are considered as being part of a *range of users*, and a *range of users* can be considered as a sub-lock. In the case of a hotel, it is possible to designate a range-user relation for each lock:

Table 1 shows an example of a range of users. The idea of a sub-lock is given so that the system is easier to understand. This way, sub-locks and ranges can be interchangeable.

Range	Sub-locks	User
G0	0	Customer
G1	1	Cleaning staff level 1
G2	2	Not used
G3	3	Maintenance staff
G4		Managing director

Table 1: example of a range of users.

This idea of a range is clearly demonstrated in the *WinKeyInitialize* software, as shown on the copy of the screen in figure 1.

2.2 Properties of ranges

For each of the eight ranges *Properties* must be defined (figure 2). Properties can be defined as rights (rights for opening the door, rights to program a personal code, etc.). These rights are planned for by the manufacturer and apply to each user of a range.

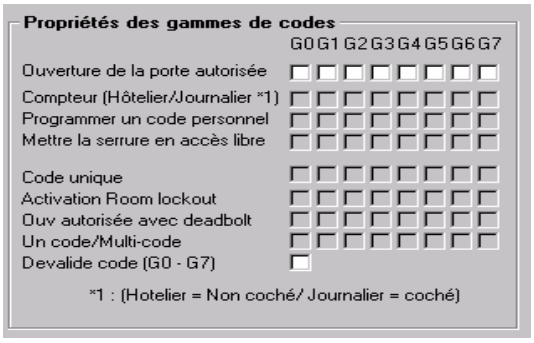


Fig. 2: Location of properties of Ranges.

	Range number (sub-locks)							
	0	1	2	3	4	5	6	7
Door opening autorised	•	•						
Program a personal code	•							
Free access mode		•						
Etc.								

Table 2: Example for configuring properties of ranges of codes.

A possible configuration for properties of ranges of codes could be similar to the one given in table 2.

In this example, the user allocated to range 0, generally the customer will have a code generated that will authorise them to open the door and change the code that was given to them.

The user of range 1, for example cleaning staff on the first floor, will have a code that gives them the right to put the lock into free access mode.

For each range (potential user), the properties of the range must be defined. These properties are as follows:

Door opening authorized

If the box is ticked, the corresponding range is activated. Boxes below in the same column become available. This means that this sub-lock can be programmed.

Programming a personal code

If this box is ticked, the user who has been allocated a code calculated by *Winkey* has authorisation to type in their own personal code by entering the following sequence: old code # New_code (in *the case 0)*.

Putting the lock into free access mode

With the exception of a few special cases, this property is exclusively used by the staff and should therefore be ticked in a range other than 0.

Without tick:

The lock has only the standard opening and closing (No free access mode).

Ticked:

The lock has the "free access" mode.

This property enables the lock to be left unlocked after typing the code and to be locked again at a later time.

One Code

This enables ranges to be generated with codes that can only work once – a range must therefore be reserved for the one code notion. The code cannot be used again on the sub-lock concerned for the day in question if "time unit" is the day.

Activation "room lockout"

The manager might want to shut down a lock (in reality designated sub-locks). A tick in the range concerned gives the right to open or shut down the lock.

When the user has activated "*Room lockout*" on the lock, there is no access to the room. All codes that would usually open the door will be refused. The lock can only be opened using ranges of code that have the right to activate or de-activate the *Room lockout.*

Opening with deadbolt authorised

The 660 locks (except W model) have a locking mechanism that can be closed by the user inside the room to avoid being disturbed by someone who has a code (maintenance/cleaning staff etc.).

A tick in the range concerned enables this mechanical locking mechanism to be overridden.

This function can be useful in the case of a fire for example.

2.3 Secret codes

Every day a lock can take up to 8 codes, each code corresponding to a range (sub-lock).

Entry of a valid code enables the lock to be opened. Codes are created in the first place by the software *Winkey*.

In the example given in table 3, the four codes given in column 100 can be used to open lock No. 100 (Customer code, Staff working on the first floor, Maintenance staff or the Manager):

- All staff working on the first floor has the same code to enter rooms on the first floor (room Nos. 100 to 102), but do not know the code for staff working on the second floor (rooms 201…).
- In the same way, staff working on the second floor only has codes to enter rooms on this floor.

Maintenance staff has access to all rooms, although a time period (not yet visible) can be defined.

- The access code allocated to the manager gives authorisation to enter all rooms at any time (this function is not visible at this stage in the configuration).
- The code is generated for each lock according to specific parameters such as the starting date, duration of validity for the code and so on. Duration must therefore be defined for the code to be valid.

2.4 Advance

Reasons behind an advance

A lock can accept up to four different advances for a period in question. It was also stated that the code given to a user was valid from a specific starting date for a limited duration.

Imagine that a first customer (range 0) used their code to open the lock. For one reason or another, the room was freed straight away without having been used. The same room is then allocated to another customer, on the same beginning date and perhaps other length of time. Even if the codes are not the same, the codes for the first and second customers are both valid – the lock can be opened with two codes.

In order to avoid this problem, the idea of an advance is applied. As soon as the second valid code is authorised, the advance is activated. It is used to cancel the validity of the previous code. The following day the advance will be positioned at 0.

In conclusion, an advance is applied when the starting date for 2 different codes is the same.

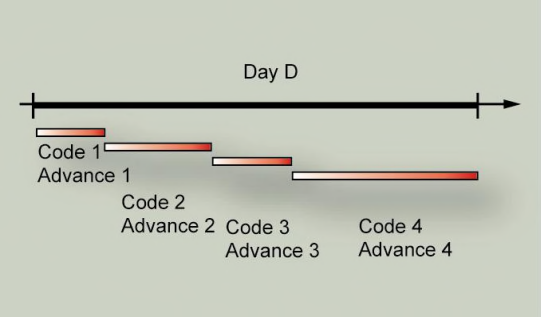


Fig. 3: Case of identical dates with the same beginning. Up to 4 different codes can be entered for each user; entry of a new code cancels the previous one.

It's the *Winkey* software of the PC that detects that an identical code has been generated and automatically creates an advance +1. This new advance value creates a different code.

			Lock number				
User	**Range**	**Sub-lock**	**100**	**101**	**102**	**201**	**202**
Customer	0	0	123456	462789	874532	069176	664039
Staff on the floor concerned	1	1	567890	567890	567890	756433	756433
Maintenance	2	2	012345	012345	012345	012345	012345
Manager	3	3	543210	543210	543210	543210	543210
Not used	4 to 7	4 to 7					

Table 3: Example of a code table. It should be noted that identical colours have been allocated to staff including maintenance and the manager. This enables each of them to open different doors with one code.

2.5 Range keys

These will be used when generating codes in *Winkey*.

Time brackets

Extra restrictions can be imposed. The code generating software can, for each range, allocate a time bracket for authorised access.

So, for example :

- Each customer has their own code.
- Staff working of the first floor has a code giving access to locks on the first floor only, between 10 a.m. and 4 p.m.
- Maintenance staff can have access to all locks between 10 a.m. and 10 p.m.
- The manager can have access to all locks 24 hours a day.

Consequences of summer/winter time changes on the code validity.

For example, the time bracket for staff is fixed between 10 a.m. and 4 p.m. (figure 4).

In winter the time bracket will stay the same (from 10 a.m. to 4 p.m.) because the lock works on winter time and is not reprogrammed for the summer.

When the time changes to summertime, time brackets will move back one hour and become from 11 a.m. to 5 p.m. It will therefore be impossible for staff to have access to a room before 11 a.m. In order to avoid this problem, the time bracket should be programmed from 9 a.m. to 4 p.m. on the winter time hours. This means access will be possible:

- From 9 a.m. to 4 p.m. in winter.
- From 10 a.m. to 5 p.m. in summer.

In both cases, summer time or winter time, access will be possible from 10 a.m. to 4 p.m.

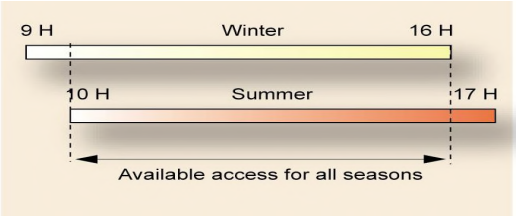


Fig. 4: Relation between summer-winter times and possible access.

Using generated codes

Codes generated by range 0 are most often used by customers as they are 6 digit codes.

Codes generated by ranges 1 to 7 require a sequence of keys to be typed in before (keys # and *) and eventually an extra character; full code entry for ranges 1 to 7 has a variable number of characters. This is why these ranges are reserved for staff only.

2.6 Audit

This function is linked to the lock itself and not the *Oracode* software. The audit function records every code typed into the keypad (good or bad code), with up to 500 recorded codes possible in version 6. This enables all events to be recorded along with the time they took place and user identification. After the maximum limit, the oldest recordings are erased. Data can be collected through the use of an infrared link.

An audit recording includes the following information:

Date, Time, Range, Code, Kind of action

- Good codes and bad codes.
- Kind of action taken by the lock (good code, bad code, pass mode, validate/devalidate “pass mode”, validate/devalidate “Room lock out”, good code but outside lever not in initial position, good code authorised opening with lock inside (dead bolt), good code but opening unauthorised with lock inside, association with personal code, programming or lock audit).

3) Using the lock

3.1 Symbols used

Definition of the symbols have been used for explanations.

c			Key 0 to 9
0	to	9	
Id	(Note 1)		Initial identification (combinations of keys * and #) as follows:
nothing	or	0*	For range 0
#	or	1*	For range 1
*	or	2*	For range 2
##	or	3*	For range 3
**	or	4*	For range 4
#*	or	5*	For range 5
*#	or	6*	For range 6
***	or	7*	For range 7

Note 1: 0* - 7* on 660M and 0# - 7# on 660E-F

3.2 Standard access (Lock opening)

If *Free access mode* or *Activate room lockout* are non-ticked (*WinkeyInitialize*, section General Lock Parameters)

Entry	Access to range No. (s)
cccccc	Range 0
id cccccc	Ranges 1 to 7

If *Free access mode* or *Activate room lockout* are ticked (*WinkeyInitialize*, section General Lock Parameters)

Entry	Access to range No. (s)
cccccc 0	Range 0
id cccccc 0	Ranges 1 to 7

3.3 Free access (pass mode)

This function corresponds to the activation of option *Free Access Mode*. The lock is unlocked after the code has been typed in and must be locked again at a later time.

Entry	Access mode
id cccccc 2	Room in Free access mode.
id cccccc 3	Free access mode cancelled (the room returns to standard access mode with the use of a code).

3.4 Opening with "*room lockout*"

This function corresponds to the activation of option *Activation room lockout*; it can only be used by ranges 1 to 7. Lock opening can be blocked.

Entry	Lockout mode
id cccccc 5	The room is shut off. All codes that are usually valid will be refused. Only ranges of code having the right to activate or deactivate "*Room lockout*" mode will be able to open the lock.
id cccccc 6	*Room lockout cancelled* (the room returns to standard access mode with the use of a code).

3.5 Personal code

This function corresponds to the activation of option *Program a personal code*. In order to change the personal code of the lock:

Entry	Personal code
id cccccc # CCCCCC	cccccc : code allocated by *Winkey*. CCCCCC : new code chosen by the customer. Note: for Range 0 (range usually reserved for the customer), there is no initial *id* to be typed in.

3.6 Infrared link

Entry	IR Activation
##	The lock goes into awaiting infrared communication mode for 30 seconds. After this time, the lock returns to standard operating mode.

3.7 General lock operating

Initial start up of the lock

As soon as the power is switched on, the light will flash once to show that the lock has no data stored. If the light does not flash once the power is switched on, this shows that the lock still contains data.

If red and green lights flash at the same time when power is switched on, this shows that the battery is low.

Lights and buzzer

When pressing a key, the green light comes on and the buzzer works for as long as the key is pressed.

Good code:

the green light flashes for half a second and the buzzer gives off a high pitched sound.

Bad code:

The red light flashes for half a second and the buzzer gives off a low pitched sound. After the fourth consecutive bad code, the red light flashes for 40 seconds followed by a low pitched sound from the buzzer. The keypad is blocked during this time. A bad code could be due to one or several of the following reasons:

- The code is typed in too slowly.
- Wrong keys used.
- Code not valid for the lock.

If both the red and green lights flash when pressing the keys or when turning the lock on this indicates low battery power.

Changing batteries

After opening the box, changing the batteries and putting the battery pack back, the motor will release the lock. Inside and outside handles must not be touched and the keys on the keypad must not be pressed while replacing batteries.

Lock 660 W

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