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VMBKP

Keypad with RFID for Velbus

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DESCRIPTION

The VMBKP is a vandal-resistant and weatherproof keypad. It combines a digital keypad and proximity EM card reader in one unit.

The keypad has been designed for full feature access control in a Velbus home automation system. It features two User Groups, with up to 1,000 users for User Group 1 and 100 users for User Group 2. Per User Group different actions can be configured (e.g. controlling different door locks, different time settings, …). Each user can be configured to use either a code, an EM Card, or a combination of both. See "Security level of the operation media" on p. 13 for more details.

In the Velbus configuration software VelbusLink the keypad appears with two input channels "User group 1" and "User group 2", and a "Tamper alarm" channel.

VMBKP	33	VMBKP
User group 1	CH1	Released
User group 2	CH2	Released
Tamper alarm	CH3	Released
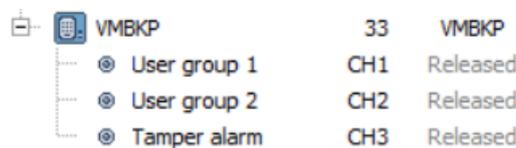
The keypad can accommodate up to 70 program steps to automatically operate, lock and unlock User Group channels, including day, week and year programs and an astronomical clock (sunrise and sunset times).

The User group channels that appear in VelbusLink will typically be used to activate a magnetic door lock connected to a Velbus relay. The Tamper channel can control a Velbus relay which in turn is connected to e.g. a siren or the input of an alarm system.

Apart from simple door opening using User Codes and/or EM Cards, the following advanced features are also available.

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EGRESS BUTTON

The Egress button is a button placed inside the building that allows users to open the door from the inside without entering a code or presenting an EM Card. The Egress button has advanced options like optional delays, beeping sounds and alarms. For more information, see EG IN (Egress Input)" on p.9 and "Intelligent Egress Button – A unique feature of the keypad" on p.31.

VISITOR CODES

Visitor codes are codes that can only be used once, or that expire after a certain time. See "Visitor codes (for user group channel 1 only) (location 40)" on p.24.

DURESS CODES

Duress codes are codes that grant access just like normal codes, but that secretly also trigger an alarm. They are typically used when a user is forced to enter their code. The door opens normally, but unbeknown to the attacker, other security measures can be taken (e.g. placing an automatic call, arming an alarm system, blocking other entrances, …). See "DUR O/P (Duress Output)" on p.9 and "Duress codes (for user groups 1 & 2) (locations 41 & 42)" on p.25.

DOOR SENSOR

A door sensor (e.g. a magnetic switch) can be connected to the DOOR SENS connector.

This allows for advanced functions like door forced open warning, door propped up warning, and door auto relock. For more information see "DOOR SENS (Door Position Sensing Input – Normally Closed)" on p.9, "Door forced open warning (location 80)" on p.30, "Door propped-up warning (location 81)" on p.31 and "Door sens" on p.39.

TAMPER ALARM

When the keypad's cover is removed from its base, the Tamper channel becomes "pressed" until the cover is placed back, and actions can be executed (e.g. locking the keypad, starting a siren, switching on a light, …). These actions are configured in the configuration software VelbusLink. (See the Velbus Installation Guide Part 2: Configuration on www.velbus.eu for more information).

CONFIGURABLE MASTER CODE

The Master Code is the code that needs to be entered in order to configure User codes, Cards, and other settings explained in the following chapters. The Master Code can be 4 to 8 digits long, and can be chosen by the owner. For more information, see "Master code (Location 01)" on p.18.

DAP CODE (DIRECT ACCESS TO PROGRAMMING)

In case the Master Code would be forgotten, the keypad can be put in programming mode using the DAP code. For safety reasons, the DAP code only works during the power-up delay (the first minute after power is applied). See "Direct Access to Programming mode with "DAP" code -- 2 8 2 8" on p.16.

INHIBITION

User Groups 1 and 2 can be temporarily locked using Velbus actions and program steps. These are configured in the VelbusLink software. (See the Velbus Installation Guide Part 2: Configuration on www.velbus.eu for more information).

Apart from this, there is also a hardware connection, O/P 1 INH, that, when closed, inhibits User Group 1. See "O/P 1 INH (User Group 1 Inhibit Control Input – Normally Open)" on p. 9. This hardware inhibition is executed locally in the keypad and is not communicated to the rest of the Velbus system. It can be controlled by a directly connected button, alarm system output, etc. The hardware inhibition can be paused or overruled by the Super User codes. See "Super user code (Location 02)" on p. 18.

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FEATURES

- designed to be used with the Velbus domotics system
- vandal-resistant die-cast zinc alloy protection bracket for surface mounting
- faceplate material: stainless steel
- back-lit keypad (blue light) with metal keys and selectable light duration (on-10s-off)
- standby LED and 2 user channel status LEDs on the front
- built-in tamper detection
- weatherproof (IP65)
- 2 separate user channels with max. 1,000 users for controlling channel 1 and max. 100 users for channel 2
- 50 visitor codes for temporary workers and visitors, for one time use or which expire after a programmable time of 1-99 hours
- 4-8 digit user codes, RFID cards or fobs, or combination of the two for different security levels
- advanced possibilities using Velbus configuration, among others:
  - channel inhibition during certain periods and/or activated by Velbus buttons, sensors, …
  - configure a Velbus button as egress button, for opening the door without using codes or cards (e.g. for a button inside the building)
- additional functionality using inputs/outputs that are not connected to the Velbus system (if needed these can be connected using Velbus input and output modules)
  - input for sensing the door position e.g. by directly connecting a normally closed magnetic door switch (used for warning beeps when the door remains open, advanced security access, …)
  - egress input: for opening the door without using codes or cards, e.g. using a button inside the building directly wired to the keypad
  - duress output: when entering the duress code, the user channels will be operated just like a normal code, but additionally the duress output (open collector) will be closed, e.g. for triggering a silent alarm when someone is forced to operate the keypad
  - alarm output (open collector): closes when the door is forced open or opened after the egress delay (configurable 1-99 seconds)
- compatible with 125kHz Manchester 64-bit EM4100 & EM4200 EM cards and keyfobs
- CAN terminator switch with state detection
- 8 Velbus channels:
  - 2 user channels
  - tamper alarm
  - 5 virtual buttons
- uses one Velbus address (configurable in VelbusLink)
- extensive day, week and year programs plus a built-in astronomical clock (sunrise and sunset timing) are included to operate, lock and unlock the channels automatically (configurable in VelbusLink)

SPECIFICATIONS

- dimensions: 144(H) x 78(W) x 32(D) mm
- supply voltage: 15±3VDC
- current consumption: 130mA max.
- weight: 400gr
- Velbus bus connector cross section (solid wire): 0,5 - 1,5mm²
- mounting screws, wall plugs and 2 RFID cards included
- operating conditions: -20 to +70°C
- protection rating: IP65
- delays for code entry and card reading:
  - 10 seconds max. delay for next digit entry
  - 30 seconds max. delay for code entry after card reading
- possible bus addresses: 250
- number of channels: 8
- max. number of program steps: 70
- storage conditions: -20 to +70°C, 5-95% relative humidity non-condensing
- housing: die-cast zinc alloy protection bracket
- faceplate material: stainless steel

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OVERVIEW OF CONNECTION TERMINALS

VELBUS CONNECTIONS (REQUIRED) (-, +, L, H)

The connector for the Velbus bus cable. The – and + connections are for the 15±3VDC power supply. The L and H connections are for the Velbus data communication.

Next to the Velbus connection terminal there is also a Velbus CAN terminator switch, marked "TERM". According to the position of the VMBKP in the Velbus installation, this terminator may need to be closed. Please consult the Velbus Installation Guides on www.velbus.eu for more information on the Velbus system and on the CAN terminators.

OTHER CONNECTIONS (OPTIONAL/ADVANCED)

ALM O/P (Alarm Output)

An NPN transistor open collector output with a maximum power rating of 24VDC/100mA sink. It is equivalent to an N.O. (Normally Open) terminal referring to ground. It is designed for triggering a N.O. protection zone of an alarm system. It can also be used to drive a low power device, such as a relay or a low power control input for other equipment.

DUR O/P (Duress Output)

An NPN transistor open collector output with a maximum power rating of 24VDC/100mA sink. It is equivalent to an N.O. (Normally Open) terminal switching to (-) ground after the Duress Code is entered. It can be used e.g. to trigger an alarm zone of a security system or turn on a buzzer to notify a guard.

O/P 1 INH (User Group 1 Inhibit Control Input – Normally Open)

A Normally Open (N.O.) sensing input point for controlling User group 1. With this terminal connecting to (-) ground, the Egress Button and the PINs and Cards for User Group 1 are all disabled.

NOTES:

- This inhibit function does not overrule the Duress Codes and the Super User Codes. They are always valid.
- This inhibit function is a hardware feature of the keypad, not to be confused with the VelbusLink "inhibit" actions. These function independently of each other.

EG IN (Egress Input)

A Normally Open (N.O.) input terminal referring to (-) ground. A normally open button connected to this input can activate the User Group 1 channel just like using Codes/Cards.

An egress button is usually installed *inside* the house near the door. More than one egress button can be connected in parallel to this terminal. Leave this terminal open if not used.

See "Intelligent Egress Button – A unique feature of the keypad" on p.31 for more information about the Egress Button with programmable features.

(-) GND (Common ground)

A grounding point that is common with the – input of the Velbus bus connection.

DOOR SENS (Door Position Sensing Input – Normally Closed)

A Normally Closed (N.C.) sensing point referring to (-) ground. By connecting a magnetic door sensor to this input, it monitors the open or closed status of the door. Connect this input with a wire to (-) ground if not used (factory default).

It can be used for the following functions:

Door Auto Re-lock

The system immediately deactivates the User Group 1 channel when the door is closed again, without waiting for the end of the programmed duration for User Group 1[1]. This prevents unwanted "tailgate" entry. The Door Auto Re-lock function is automatically active when a sensor is connected to the DOOR SENS input, no configuration is required.

Door Forced Open Warning

The keypad generates a "door forced open" warning (beeps and closing of the ALM O/P) when the door is forced open without a valid user Code, Card or egress button push. The warning lasts for the programmed duration (1-999 sec). It can be stopped with a User Code or card for User Group 1 at any time. See "Door forced open warning (location 80)" on p.30 for more information.

Door Propped-up Warning

The keypad generates propped-up warning beeps when the door is left open longer than the programmed allowable delay. The warning will last as long as the door remains open, until it is closed again. See "Door propped-up warning (location 81)" on p.31 for more information.

INT LOCK
Not applicable.

DATA I/O
Not applicable.

TAMPER N.C. (Tamper Switch Normally Closed Contact)
Reserved by the Velbus system. (This dry contact is closed while the keypad is secured on is box, and open while the keypad is separated from the box. The corresponding Velbus "tamper alarm" channel is "released" while the keypad is secure on its box and "pressed" while the keypad is separated from the box.)

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[1] The default activation duration is 5s but this can be changed to another value, see "Output mode & Timing for User Group 1 & 2 channels (location 60)" on p.29

FACILITIES

ON-BOARD LED INDICATORS

GREEN (Right): lights up when User Group 1 channel is "pressed".

AMBER (Centre): flashes in Standby. Together with the beep tones it reflects the system status. The standby flashing can be turned OFF, see "Status LED flashing during standby (location 73)" on p.30 for more information.

RED (Left): lights up when User Group 2 channel is "pressed".

BUZZER TONES & LED SIGNALS

The buzzer and the amber (centre) LED indicator emit the following tones and signals reflecting the system status:

STATUS	TONES (*)	AMBER LED SIGNAL
In Programming Mode	none	ON
Successful Key Entry	1 beep	1 Flash
Successful Code / Card Entry	2 beeps	2 Flashes
Unsuccessful Code / Card Entry	5 beeps	5 Flashes
Power Up Delay	Continuous beeps	Continuous flashes
User Group Channel Activation (**)	1 second long beep	none
In Standby (***)	none	Slow flashing (1 second intervals)
System Refreshing	none	Fast flashes for 2.5 minutes
Card or Code already stored in system	1 long beep	none
Real-time clock stopped after power failure	Continuously 3 fast beeps per 5 seconds	none

NOTES

(*) All buzzer tones can be turned ON or OFF through the programming option at location 71

(* *) The User Group channel activation beep mode can be selected through the programming option at location 72

(* * *) The Standby flashing can be turned ON or OFF through the programming option at location 73

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JUMPER FOR BACK-LIT SELECTION (TOP RIGHT OF THE PCB)

"FULL" setting   "AUTO" setting   "OFF" setting
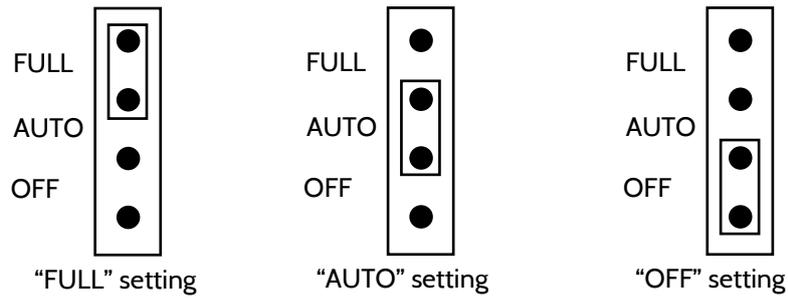
1. Full Back-lit: The keypad is continuously dimly backlit in standby. It turns to fully backlit when a key button is pressed, then back to dimly backlit 10 seconds after the last key button is pressed.
2. Auto Back-lit: The backlit is OFF in standby. It turns to fully backlit when a key button is pressed, then back to OFF 10 seconds after the last key button is pressed.
3. OFF: Back-lit function disabled

GENERAL CONCEPTS

CRITERIA FOR CODES AND CARDS

Prime Codes

The prime codes include the a) User Codes, b) Master Code, c) Duress Codes, d) Super User Codes, e) Common User Codes and f) Visitor Codes. All these codes MUST be unique. It is not allowed to repeat a prime code for a second function.

All the codes in this system can be 4-8 digits for Manual Entry Mode. For Auto Entry Mode all codes need to have the same length as the Master Code. See "User code entry mode – Auto or manual (location 70)" on p.29 for more information.

Prime Cards

All the User Cards are prime cards. They cannot be used for a second function. E.g. if a card was programmed for operating User Group 1, is not allowed to use it also for User Group 2.

The cards need to be 125Khz proximity EM cards.

Secondary User Codes

A Secondary User Code is used to enhance the security of a user card. A Secondary User Code is a code that must be entered after presenting the card. The keypad requires both card and code to grant access. The secondary code can be repeated for a group of cards, or it can be unique with one code for one card.

NOTE: The keypad will reject repeated use of prime cards or prime codes while programming and indicate this with a long beep.

SECURITY LEVEL OF THE OPERATION MEDIA

The keypad provides 5 operation modes for different security levels. For more information on the configuration of these, see "User codes / cards for User Groups 1 & 2 (locations 10 & 20)" on p.20.

1) EM Card Only – Operation Mode 1

A general way for access control: simply present a card to open the door. This security level is moderate, but it is user convenient.

2) User Code Only – Operation Mode 2

A general way for access control: simply enter a code to open the door. This security level is moderate, but it is user convenient.

3a) EM Card + Unique Secondary User Code – Operation Mode 3 (using a Unique Secondary User Code for each user)

In this operation mode, with each Card a unique Secondary Code is associated. This prevents anyone else from gaining entry by using a lost Card. This operation mode is ideal for areas that need a high security level.

This operation mode can also report a Duress Alarm (close the DUR O/P) when the Duress Code is entered instead of the unique Secondary User Code. This is useful to trigger a silent alarm when the user is forced to open the door. See "Duress codes (for user groups 1 & 2) (locations 41 & 42)" on p.25 for more information.

3b) EM Card + Group Secondary User Code – Operation Mode 3 (using the same Secondary User Code for various users)

A Secondary User Code can be repeatedly used for a group of cards. The owner can for instance make a unique department code for each department in a company. Only the staff of the department holding a card and knowing the code is granted access. This approach increases the departmental security and prevents a lost card being used by another group of people in the company to gain access.

This operation mode can also report a Duress Alarm (close the DUR O/P) when the Duress Code is entered instead of the unique Secondary User Code. This is useful to trigger a silent alarm when the user is forced to open the door. See "Duress codes (for user groups 1 & 2) (locations 41 & 42)" on p.25 for more information.

4) EM Card + Common User Code – Operation Mode 4

The keypad requires both a Card and a Common User Code to grant entry. A Common User Code is a user code for all the cards. The security level is higher than just a card or a user code alone.

This operation mode can also report a Duress Alarm (close the DUR O/P) when the Duress Code is entered instead of the unique Secondary User Code. This is useful to trigger a silent alarm when the user is forced to open the door. See "Duress codes (for user groups 1 & 2) (locations 41 & 42)" on p.25 for more information.

LIST OF USER INFORMATION

To avoid confusion and for programming convenience, we suggest making a list of the user information and keeping this for future reference. See the VMBKP Quickstart Guide (delivered with the VMBKP, or free download on www.velbus.eu) for an example and a template.

PROGRAMMING & OPERATION

NOTE: For reference, the VelbusLink configuration screen for the VMBKP contains a "programming code generator" section. This useful tool will present you with the codes you need to enter on the keypad. *It does not send the codes to the keypad however, these need to be manually entered using the physical buttons on the keypad.*

POWER-UP THE KEYPAD

The keypad has a power-up delay of 1 minute after power has been applied. This is the time frame designed for setting the keypad to programming mode with the DAP (Direct Access to Programming) code. See "DAP CODE – 2 8 2 8" below for more information.

1. The keypad emits continuous beeps for 1 minute after power-up, and the amber LED is flashing.
2. The power-up delay can be stopped instantly with 1 2 # if the delay beep is found annoying and setting the keypad to programming mode with the DAP code is not required.
3. The keypad will automatically set itself to Normal Operation Mode after the 1 minute power-up delay has expired or has been stopped with 1 2 #.

SET THE KEYPAD IN PROGRAMMING MODE USING THE MASTER CODE

In order to program the keypad, it needs to be set in programming mode first.

When the keypad is in normal operation after the power-up delay, it can be set in programming mode by entering the Master Code and validating it with * *.

Master code	Validation
0 0 0 0	* *

For the owner's convenience in programming the first time, a Master Code 0 0 0 0 has been stored in the keypad upon leaving the factory. This is NOT a default code. For security reasons, the owner should as soon as possible replace this Master Code with a personal one. See "Master code (Location 01)" on p.18 for more information.

The Center LED (amber) is ON after the keypad confirms programming mode with 2 beeps.

DO NOT power off the keypad while it is in programming mode. Otherwise, the data in the keypad's memory may become corrupted.

DIRECT ACCESS TO PROGRAMMING MODE WITH "DAP" CODE -- 2 8 2 8

In case the Master Code is forgotten, apply the following procedure to set the keypad into programming mode with the DAP code:

1. Switch OFF the power for 1 minute to ensure that the keypad is fully discharged.
2. Switch ON power again. The keypad is in Power-up Mode for 1 minute. The buzzer emits beeps and the Status LED is flashing. This is the only time frame to accept the DAP code.
3. Press the Egress Button (the button connecting EG IN and (-)GND) once to enable the keypad for accepting the DAP code. The power-up beep stops after the Egress Button is pressed.
4. Key in the DAP code 2 8 2 8 and validate it with * *. The Status LED is ON and the keypad is in programming mode like when using the Master Code. It is ready to accept new programming data until you exit programming mode.

Egress button	DAP code	Validation
Press once	2 8 2 8 * *	

5. Program a new Master Code to replace the old one. See See "Master code (Location 01)" on p.18 for more information.

NOTE: The keypad will set itself to normal operation mode 1 minute after power-up if the Egress Button is not pressed and the DAP code is not keyed in. To set keypad back to power-up mode, repeat steps 1-4.

REFRESH THE SYSTEM WITH THE REFRESHING CODE --- 9 9 9 9

The keypad can be refreshed (cleaning all the programmed data and setting it back to default values, except the Master Code).

Refreshing code   **Validation**

9 9 9 9   ✱ ✱

NOTES:

   a. Make sure that refreshing the system is really required before entering the Refreshing Code.
   b. Refreshing may take a few minutes. The status LED (amber) keeps flashing during refreshing.
   c. The keypad is back to its default value after refreshing. Reprogramming of the desired values is necessary.

Default values after refreshing

LOCATION	PARAMETER	DEFAULT FUNCTIONS & VALUES
0 1	Master Code	Not refreshed (0 0 0 0 Factory Set)
0 2	Super User Codes	Nil ----- User Program Required
0 3	Common User Code 1	Nil ----- User Program Required
0 4	Common User Code 2	Nil ----- User Program Required
1 0	User Codes & Cards for User Group 1	Nil ----- User Program Required
2 0	User Codes & Cards for User Group 2	Nil ----- User Program Required
4 0	Visitor Codes	Nil ----- User Program Required
4 1	Duress Code for User Group 1	Nil ----- User Program Required
4 2	Duress Code for User Group 2	Nil ----- User Program Required
5 1	Output Mode of User Group 1	Time = 5 Sec, Momentary
5 2	Output Mode of User Group 2	Time = 5 Sec, Momentary
5 5	System Real-Time Clock	Nil ----- User Program Required
5 6	Start & Stop Time	Nil ----- User Program Required
6 0	Personal Safety & Lock-out	Code = 1, Lock-out 60 seconds after 10 False Codes/Cards
7 0	User Code Entry Mode	Code = 2, Manual Entry Mode
7 1	Notification Tones ON-OFF Selection	Code = 1, Notification Tone ON
7 2	Channel State Announcer	Code = 1 Sec, Notification Beep ON
7 3	Status LED Standby Flashing ON-OFF	Code = 1, Flashing Enabled
8 0	Door Forced Open Warning	Code = 0, Warning Disabled
8 1	Door Propped-up Warning	Code = 0, Warning Disabled

LOCATION	PARAMETER	DEFAULT FUNCTIONS & VALUES
9 0	Egress Mode, Delay, Warning Beep and Alarm	Code 1 = 0, Instant, No Delay
		Code 2 = 1, Momentary Contact without Warning

NOTE:

The DAP Code 2 8 2 8 and the Refreshing Code 9 9 9 are fixed in the operating system. They can not be changed in any way.

MASTER CODE (LOCATION 01)

Location   **Master code**   **Validation**

0 1   4 to 8 digits   #

1. Location
   - Enter Location 0 1
2. Master code
   - The Master Code is the authorization code for setting the system to programming mode. It is NOT a User Code operating the User Group channels.
   - The Master Code can be 4 to 8 digits long.
   - When a new master code is entered and confirmed, the old master code is replaced.
3. Validation
   - Press the # key once. A double beep confirms the entry.

Example:

Set the Master Code to 2 2 3 3: 0 1 2 2 3 3 #

SUPER USER CODE (LOCATION 02)

The Super User Code has two functions:

1. It allows hardware inhibition[2] to be paused manually.
2. Using the Super User Code, the User Group channels can be activated even when hardware inhibition[2] is active

Location   **Super user code** **Validation**

0 2   4 to 8 digits   #

1. Location
   - Enter Location 0 1
2. Super user code
   - The Super User Code can be 4 to 8 digits long.
   - When a new Super User Code is entered and confirmed, the old Super User Code is replaced.
3. Validation
   - Press # key once. A double beep confirms the entry.

Examples

- Set the Super User Code to 2 5 8 0: 0 2 2 5 8 0 #
- To delete a Super User Code from memory, enter the location number, followed by #: 0 2 #

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[2] cfr. "O/P 1 INH (User Group 1 Inhibit Control Input – Normally Open)" on p.8

Operation and functions of the Super User Code

1. Operate User Group Channels 1 and 2

The Super User Code operates the User Group 1 and 2 channels just like a normal User Code. Simply enter the Super User Code, followed by # and the number of the desired User Group channel.

SUPER USER CODE # 1: Activate User Group 1 channel

SUPER USER CODE # 2: Activate User Group 2 channel

2. Optional Functions Controlled by Super User Code for User Group 1

Apart from controlling the two User Group Channels 1 and 2, the Super User Code can also be used to enable the following optional functions controlling User Group 1 for user convenience or security enhancement.

The Super User Code and Egress Button are excluded from any hardware inhibition[3] and lockup[4] functions; for safety reasons they are valid for User Group channel activation at any time.

A. Override the User Group 1 channel (keep door unlocked)

The User Group 1 channel is usually for door lock control. In some situations, the door may need to be unlocked for a period of time to allow door opening without User Codes or EM Cards. This function is toggled with the following code entry.

SUPER USER CODE # 7: the door is unlocked, enter this code again to cancel unlocking and return to normal operation

NOTE:

- The door is unlocked while the function is enabled. The "User Group 1" LED (Green) turns ON.
- Do not forget to stop this function after use (by entering the same code again) because the door will remain unlocked.
- Fail-secure electric locks require power to maintain an unlocked condition. Prolonged periods of continuous unlocking may damage them. This function is not recommended for fail-secure electric locks.

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[3] cfr. "O/P 1 INH (User Group 1 Inhibit Control Input – Normally Open)" on p.8

[4] cfr. "Personal safety and system lock-up (location 60)" on p.30

REMARK:

While SUPER USER CODE # 7 is in operation to maintain the door unlocked, the functions that rely on the door sensor (such as a magnetic contact)[5] and the User Codes for User Group 1 are all temporarily suspended until SUPER USER CODE # 7 is entered again to release the door hold function.

The following are the temporarily suspended functions:

- Door Auto-relock (see "Door Auto Relock" on p.39)
- Door Forced Open Warning (see "Door forced open warning (location 80)" on p.30)
- Door Propped-up Warning (see "Door propped-up warning (location 81)" on p.31)
- Door Opening Alarm (see "Egress mode, delay, warning beep and alarm (location 90)" on p.32)
- All User Codes including the Super User Code for User Group 1
- Duress Output activated by The Duress Code for User Group 1 (see "DUR O/P (Duress Output)" on p.9)

COMMON USER CODES FOR USER GROUPS 1 & 2 (LOCATIONS 03 & 04)

The Common User Codes 1 and 2 are used for enhancing the security level of the User Group 1 and 2 channels respectively. See Operation Mode 4 on p. 20 and "Security level of the operation media" on p. 13 for more information.

NOTE: a Common User Code alone can NOT operate the User Group channels directly.

Locations	Common user code	Validation
0 3 – 0 4	4 to 8 digits	#

1. Locations
   - 0 3 : location for the common user code for User Group 1
   - 0 4 : location for the common user code for User Group 2
2. Common user codes
   - The Common User Code can be 4 to 8 digits long.
   - When a new Common User Code is entered and validated, the old one is replaced.
3. Validation
   - Press # key to confirm code entry.

Example

- Set a Common User Code "1 3 5 7" for User Group 1: 0 3 1 3 5 7 #
- To delete a Common User Code for User Group 1 from memory, key in the location number 0 3, followed by #: 0 3 #

USER CODES / CARDS FOR USER GROUPS 1 & 2 (LOCATIONS 10 & 20)

Locations	Mode	User ID	Card/User code	Validation
1 0 or 2 0	1 – 5	0 0 0 – 9 9 9	Card/user code entry	#

1. Locations (User groups)
   - 1 0 User Group 1: 1000 User codes / Cards for controlling User Group 1 channel
   - 2 0 User Group 2: 100 User codes / Cards for controlling User Group 2 channel
2. Mode (Operation Mode)- see "Security level of the operation media" on page 13 for more information on the security level of these modes
   - 1 – Cards Only – 125Khz Proximity EM Card
   - 2 – User Codes Only – 4-8 Digits
   - 3 – Cards + Secondary User Code(s) – See Note (a) below
   - 4 – Cards + Common User Code – See Note (b) below
   - 5 – Delete Cards / User Codes from the selected User ID – See Note (c) below

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[5] cfr. "DOOR SENS (Door Position Sensing Input – Normally Closed)" on p.11

- **0 9 9** – Group Clearing. Clear all the User Codes & Cards of the selected User Group location. Clearing takes a few seconds to a minute.
3. USER ID (The IDs of The User Codes and Cards)
   - **0 0 0** – **9 9 9**: 1000 User IDs for the User Codes & Cards in User Group 1 Channel
   - **0 0 1** – **1 0 0**: 100 User IDs for the User Codes & Cards in User Group 2 Channel
4. Card / User Code
   - Read EM Card or enter User Code into each assigned User ID.
5. Validation
   - Press the **#** key once. A double beep confirms the entry.

NOTES:

(a) The Secondary User Code is a user code that is associated with one or more cards. It can be a unique user code for each user card or a code repeatedly used for a group of user cards as Group User Code (e.g. for a group of staff working in the same department).

(b) The Common User Codes for User Groups 1 and 2 have first been programmed at Locations 03 & 04 respectively (cfr. p.20). It is not necessary to enter the Common User Code again here and it will follow the card automatically after the card is read.

(c) Deletion of a User Code or Card (if the card was lost) can be done by keying in its ID number.

For deleting an existing card, simply read the card once and confirm. It does not require the ID number. The card deletion includes the combinations of 1) Card Only, 2) Card + Secondary User Code and 3) Card + Common User Code.

Examples – Programming and operation

Example 1: Card only for User Group 1

1. Programming (while the keypad is in programming mode)

1 0 1   **0 0 1**   Read Card   **#**

(a)   (b)   (c)   (d)   (e)

(a) The card is programmed for operating User Group 1 channel
(b) The operation mode is Card only
(c) Use ID number 001 in Group 1 to store the card, which is one of the IDs in the range 000-999
(d) Hold the card close to the reader, one beep confirms the reading
(e) Press # to store the Card, a double beep confirms a valid entry

2. Operation (while the keypad is back in operation mode)

Read Card
Present the Card. A double beep confirms that the card is read and User Group 1 channel activates.

Example 2 -- Private User Code only for User Group 2:

1.   Programming (while the keypad is in programming mode)

    |2|0| |2| |0|0|1| |1|2|3|4| |#|
    (a)   (b)   (c)   (d)   (e)

    (a)   The Private User Code is programmed for operating User Group 2 channel
    (b)   The operation mode is Private User Code only
    (c)   Use ID number 001 in Group 2 to store the card, which is one of the IDs in the range 001-100
    (d)   Enter private code "1 2 3 4" into the storage location
    (e)   Press # to store the Private User Code, a double beep confirms a valid entry

2.   Operation (while the keypad is back in operation mode)

    |1|2|3|4| |#|
    (a)   (b)

    (a)   Key in the Private User Code "1 2 3 4"
    (b)   Confirm it with the # key. User Group 2 channel activates.

Example 3: EM Card + Secondary User Code

1.   Programming (while the keypad is in programming mode)

    |1|0|3| |0|0|2| |Read Card| |2|4|6|8|0| |#|
    (a)   (b)   (c)   (d)   (e)   (f)

    (a)   The card is programmed for operating User Group 1 channel
    (b)   The operation mode is Card + Secondary User Code
    (c)   Use ID number 002 in Group 1 to store the card, which is one of the IDs in the range 000-999
    (d)   Hold the card close to the reader, one beep confirms the reading
    (e)   Enter Secondary User Code "2 4 6 8 0" after reading the card
    (f)   Press # to store the Card and Secondary User Code, a double beep confirms a valid entry

2.   Operation (while the keypad is back in operation mode)

    |Read card| |2|4|6|8|0| |#|
    (a)   (b)   (c)

    (a)   Read the Card. A double beep confirms the reading and a 30 seconds delay is given for entry of the Secondary User Code, while the Amber LED keeps flashing
    (b)   Enter the Secondary User Code "2 4 6 8 0"
    (c)   Confirm it with the # key. User Group 1 channel activates.

Example 4: EM Card + Common User Code

1.   Programming (while the keypad is in programming mode)

    |1|0|4| |0|0|3| |Read Card| |#|
    (a)   (b)   (c)   (d)   (e)

    (a)   The card is programmed for operating User Group 1 channel
    (b)   The operation mode is Card + Common User Code
    (c)   Use ID number 003 in Group 1 to store the card, which is one of the IDs in the range 000-999

(d) Hold the card close to the reader, one beep confirms the reading. (No need to key in a Common User Code but there MUST be a Common User Code already recorded in Location 03 for User Group 1 or 04 for User Group 2, see p.20 for more information).

(e) Press # to store the Card, a double beep confirms a valid entry

2. Operation (while the keypad is back in operation mode)

Read card	Common User Code	#

(a)   (b)   (c)

(a) Present the Card. A double beep confirms the reading and a 30 seconds delay is given for entry of the Common User Code, the Amber LED keeps flashing

(b) Key in the Common User Code "1 3 5 7" (the number previously programmed in location 03)

(c) Confirm it with the # key. User Group 1 channel activates.

Example 5: Delete a User Code and/or Card (for User Group 1 or 2)

1. Delete a User Code or a lost Card

1	0	5	User ID	#

(a)   (b)   (c)   (d)

(a) Enter the User Group that the User ID belongs to. "1 0" for Group 1, "2 0" for Group 2

(b) Enter "5", the Command Code for making a deletion

(c) Enter the User ID

(d) Press the # key. A double beep confirms a valid entry and the Code and/or Card associated with that User ID are cleared

2. Delete a Card (that you still have)

1	0	5	Read Card	#

(a)   (b)   (c)   (d)

(a) Enter the User Group that the Card belongs to. "1 0" for Group 1, "2 0" for Group 2

(b) Enter "5", the Command Code for making a deletion

(c) Present the EM card. A single beep confirms the reading. Reading the card is sufficient for a valid deletion of a card working with a Common User Code or a Secondary User Code

(d) Press the # key. A double beep confirms a valid entry. The Card associated with that User ID is cleared.

Example 6: Clear the whole group of users

The whole group of users including the Codes and Cards can be cleared with the following command.

1	0	0	9	9	9	#

(a)   (b)   (c)

(a) The User Group 1 – "10" is selected to be cleared. "20" for Group 2

(b) Key in the Group Deletion Command: 0 9 9 9

(c) Confirm the deletion with #. All the User Codes and Cards in Group 1 are cleared. It takes a few seconds to a minute to complete depending on the amount of data stored.

Example 7 – Report A Duress While Using a Card

The Duress Codes are Prime User Codes in the system (cfr. "Prime Codes" on p.13). They can be used to replace the Secondary User Code or the Common User Code to operate the specific User Group channel *and* report a duress alarm event at the same time (see "Duress codes (for user groups 1 & 2) (locations 41 & 42)" on p.25 for more information). Additional programming is not required, this function exists automatically when a Duress Code exists.

Operation (while the keypad is back in operation mode)

Read card	Duress Code	#
(a)	(b)	(c)

- (a) Present the Card. A double beep confirms the reading and a 30 seconds delay is given for entry of the Duress Code, the Amber LED keeps flashing
- (b) Enter the Duress Code for the specific User Group (the Code programmed in Location 41 or 42 for User Group 1 or 2 respectively)
- (c) Confirm it with the # key. The specific User Group channel activates in a normal way, but additionally the Duress Output[6] also activates, e.g. to report a Duress Event to an alarm system.

NOTE: The Duress Event can not be reported if the operation mode is EM Card alone. In that case the Duress Code needs to be entered directly instead of reading the EM card to report a Duress Event.

VISITOR CODES (FOR USER GROUP CHANNEL 1 ONLY) (LOCATION 40)

The Visitor Codes are temporary user codes for User Group 1 channel. They can be programmed as "One Time Codes" or "Codes with Time Limit". One Time Visitor Codes will be cleared automatically after the first use. Visitor codes with Time limit will be cleared when the allowed period expires when .

Location	**Visitor ID**	**Valid period (in hours)**	**Visitor code**	**Validation**
4 0	0 1 – 5 0	0 0 or 0 1 – 9 9	4-8 DIGITS	#
(1)	(2)	(3)	(4)	(5)

1. Location
   - Key in location 4 0
2. Visitor ID
   - 0 1 – 0 1 : 50 Visitor IDs for the 50 visitor codes. These are 2-digit numbers
   - 0 9 9 : Clear all the Visitor Codes in Location 40. See the programming example below for more information.
3. Valid period
   - The codes in this box MUST be two digits. They represent the validity duration in hours.
   - 0 0 : One Time Code. A One Time Code has no time limit but it can only be used ONCE. It is cleared after use.
   - 0 1 – 9 9 : Time Limit in hour(s). The Visitor Code can be set with the valid time limit of 1 to 99 Hours with a two-digit number of 01 to 99. The visitor code is cleared when the allowed period expires. The timer starts to run when the programming is validated (# key).
4. Visitor Codes
   - The Visitor Codes can be 4-8 digits when Manual Mode code entry is active (see "User code entry mode – Auto or manual (location 70)" on p.29).
   - When Auto Mode code entry is active, the Visitor Codes MUST be the same digit length as the Master Code (see "User code entry mode – Auto or manual (location 70)" on p.29).
   - The Visitor Codes can not reset the Duress Output (see "DUR O/P (Duress Output)" p.9).
   - When a new Visitor Code is put in the same memory location, the old code is replaced.
   - **NOTE: All Visitor Codes will be cleared after power down to prevent extension/confusion of their valid time limit**
5. Validation
   - Press the # key once. A double beep confirms the entry.

Examples

Example 1

Set a "One Time Visitor Code" with the number "1 2 6 8" for User Group 1

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[6] cfr. "DUR O/P (Duress Output)" on p.10

40	01	00	1268	#
(1)	(2)	(3)	(4)	(5)

1. Visitor Code programming
2. Visitor ID
3. One time code
4. The visitor code
5. Entry confirmation

Example 2

Set a "Visitor Code" with the number "1 3 7 8" that is valid for three hours

40	02	03	1378	#
(1)	(2)	(3)	(4)	(5)

1. Visitor Code programming
2. Visitor ID
3. Valid for 3 hours
4. The visitor code
5. Entry confirmation

Example 3

Delete a "Visitor Code" from Visitor ID 02.

40	02	#
(1)	(2)	(3)

1. Visitor Code programming
2. Visitor ID
3. Delete confirmation

Example 4

Clear all "Visitor Codes".

40	0999	#
(1)	(2)	(3)

1. Visitor Code programming
2. Deletion command code
3. Confirmation, all visitor codes are cleared

DURESS CODES (FOR USER GROUPS 1 & 2) (LOCATIONS 41 & 42)

Duress Codes are for **Important Persons** in case of **DURESS** while they are operating the access control keypad. The duress code operates like a normal User Code for User Groups 1 or 2, and at the same time activates the Duress Output[7] without any indication for the person(s) near the keypad. The user may use it to report an emergency and secretly ask for help when they are forced to operate the keypad. For this to work, the Duress Output needs to be connected with a security system (for example, an Auto-dialer).

NOTE: The Duress Codes are always valid. They are not subject to lookup.

Locations	**Duress ID**	**Duress code**	**Validation**

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[7] See "DUR O/P (Duress Output)" on p. 8 for more information

| 41 - 42 | 01 – 50 | 4-8 DIGITS | # |
| (1) | (2) | (3) | (4) |

1. Locations
   - 4 1: Duress Code for User Group 1
   - 4 2: Duress Code for User Group 2
2. Duress IDs
   - 0 1 – 5 0: 50 Duress IDs for User Group 1
   - 0 1 – 1 0: 10 Duress IDs for User Group 2
   - 0 9 9: Clear all the Duress Codes from the selected Location. Please see the Programming example below for details.
3. Duress Codes
   - 50 Duress Codes can be programmed for User Group 1 and 10 for User Group 2. When a new Duress Code is entered for an existing Duress ID, the old code is replaced.
   - Duress Codes can be 4-8 digits when Manual Mode code entry is active (see "User code entry mode – Auto or manual (location 70)" on p.30).
   - When Auto Mode code entry is active, the Duress Codes MUST be the same digit length as the Master Code (see "User code entry mode – Auto or manual (location 70)" on p.30).
   - The Duress Codes are 4-8 digits for Manual Mode code entry (see location 70).
   - Always set a Duress Code that is easy to remember in a panic situation. A variation of the daily used User Code (e.g. one digit different) is highly recommended. For example: if the User Code is 1 3 6 9, then 3 3 6 9 or 1 3 6 0 might be a good choice for the Duress Code.
   - The Duress Code can also be used instead of the Secondary User Code or Common User Code after reading a Card for the Duress reporting.
4. Validation
   - Press the # key once. A double beep confirms the entry.

Examples

Example 1

Set a "Duress Code" with the number "3 3 6 9" for User Group 1

| 41 | 01 | 3369 | # |
| (1) | (2) | (3) | (5) |

1. Duress Code for User Group 1
2. Duress ID
3. The Duress Code
4. Entry confirmation

Example 2

Set a "Duress Code" with the number "2 3 9 8 0" for User Group 2

| 42 | 01 | 23980 | # |
| (1) | (2) | (3) | (4) |

1. Duress Code for User Group 2
2. Duress ID
3. The Duress Code
4. Entry confirmation

Example 3

Delete a User Group 1 "Duress Code" from Duress Code ID 01 from the memory.

| 4 | 1 | | O | 1 | | # |

(1)   (2)   (3)

1. Duress Code for User Group 1
2. Duress ID
3. Delete Confirmation

Example 4

Clear the whole group of Duress Codes for User Group 1.

| 4 | 1 | | O | 9 | 9 | 9 | | # |

(1)   (2)   (3)

1. Group Location 41 (Duress codes for User Group 1)
2. Group Deletion command code
3. Confirmation, all Duress Codes in location 41 are cleared

Operation and function of the Duress Code

The Duress Code has a double action when it is entered. It activates the Duress Output[8] (for duress alarm) and at the same time activates the specific User Group Channel 1 or 2 just like a normal User Code. The Duress Code always activates the User Group channel in its group, but it does not deactivate (switch off) the Duress Output. ONLY a normal User Code or Card of anyone of the user groups, or a Super User Code can reset (deactivate) the Duress Output.

Examples

During normal operation, enter the Duress Code 3 3 6 9 of User Group 1 to activate the Duress function:

| 3 | 3 | 6 | 9 |: Duress Output activates (switches to (-) ground) & User Group Channel 1 activates.

Enter the Duress Code 3 3 6 9 of User Group 1 again:

| 3 | 3 | 6 | 9 |: Duress Output keeps activating (keeps switching to (-) ground) & User Group Channel 1 activates again.

Enter a normal User Code to reset Duress (for example, 1369 is a user code for User Group 1 channel):

| 1 | 3 | 6 | 9 |: Duress Output resets (back to OFF state) but does not activate User Group Channel 1.

Report Duress in EM Card Operation

The Duress Codes are Prime User Codes in the system (cfr. "Prime Codes" on p.13). In the "EM Card + Secondary User Code" or "EM Card + Common User Code" operation modes they can replace the Secondary User Code or the Common User Code to operate the specific User Group channel *and* report a duress alarm event at the same time (see "Duress codes (for user groups 1 & 2) (locations 41 & 42)" on p.25 for more information). Additional programming is not required, this function exists automatically when a Duress Code exists.

Operation

Taking Duress Code 3 3 6 9 in User Group 1 as an example:

| Read Card | | 3 | 3 | 6 | 9 | # |

(1)   (2)   (3)

1. Read the EM card. A double beep confirms the reading and a 30 seconds delay is given for the entry of the Duress Code, the amber LED keeps flashing

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[8] cfr. "DUR O/P (Duress Output)" on p.10

2. Enter the Duress Code 3 3 6 9 for operating User Group 1 channel
3. Confirm it with the # key. User Group 1 channel activates in a normal way and the Duress Output also activates to report Duress Event to an alarm system if connected.

NOTE: A duress event can not be reported with an EM Card alone.

OUTPUT MODE & TIMING FOR USER GROUP 1 & 2 CHANNELS (LOCATIONS 51 & 52)

Location	Output mode & timing	Validation
5 1 – 5 2	0 or 1 – 9 9 9 9	#
(1)	(2)	(3)

1. Location
   - 5 1 : Location for User Group 1
   - 5 2 : Location for User Group 2
2. Output mode & timing
   - 0 : Start/Stop Mode (Toggle). The channel activates when a User Code is entered and/or a Card is read; the channel deactivates when a User Code and/or Card is entered/read again.
   - 1 – 9 9 9 9 : Timer in seconds (default is 5 seconds). The User Group channel activates when a User Code is entered and/or a Card is read and remains activated during the set time (1s – 99,999s). The User Group channel will deactivate automatically when the time expires.
3. Validation
   - Press the # key once. A double beep confirms the entry.

Reset output timer with super user code

The Output Timer can be RESET manually at any time by entering the Super User Code before the time expires, followed by # and the number of the User Group.

Example

SUPER USER CODE # 1 : User Group 1 channel deactivates (and timer is reset)

SUPER USER CODE # 2 : User Group 2 channel deactivates (and timer is reset)

PERSONAL SAFETY AND SYSTEM LOCK-UP (LOCATION 60)

Location	Lock-up options	Validation
4 1	1 to 2 digits	#
(1)	(2)	(3)

4. Location
   - Enter location 6 0
5. Lock-up options
   - 1 : After 10 successive false Card/User Code trials, the keypad locks during 60 seconds (default).
   - 2 : After 10 successive false Card/User Code trials, the Duress output is activated (see "DUR O/P (Duress Output)" on p.9 for more information). The Duress Output can be released with any user Code or Card in the User Group 1 or with the Super User Code.
   - 5 - 1 0 : after 5 to 10 successive Card/User Code trials, the keypad locks during 15 minutes. The keypad can be reset to release the lock-up with the Super User Code in the following way: SUPER USER CODE # 9 (see also "Super user code (Location 02)" on p. 18 for more information).
   - 0 0 : Cancel all the above lock-up security measures.
6. Validation
   - Press the # key once. A double beep confirms the entry.

USER CODE ENTRY MODE – AUTO OR MANUAL (LOCATION 70)

Location	**Entry modes**	**Validation**
7 0	1 or 2	#
(1)	(2)	(3)

1. Location
   - Enter location 7 0
2. User Code entry modes: Two modes, 1 and 2, are available for User Code entry options. **The EM Card is always in Auto Entry Mode** and is not affected by the selection here.
   - 1: **Auto Entry mode**
     Auto Entry Mode requires no pressing of the # key after code entry. **In the Auto Entry Mode, the User Codes MUST have the same digit length as the Master Code.** (For example, if the Master Code is 5 digits, then all User Codes must be 5 digits as well. All User Codes not in 5 digits become invalid). When the number of digits is reached, the system will check the User Code automatically. Well suited for high traffic access control.
   - 2: **Manual Entry Mode** (default)
     Manual Entry Mode always requires that the # key is pressed after the User Code. The User Codes can be 4-8 digits arbitrary and they are NOT required to have the same digit length as the Master Code. Manual Entry Mode increases the level of security.
3. Validation
   - Press the # key once. A double beep confirms the entry.

NOTIFICATION TONES ON-OFF SELECTION (LOCATION 71)

Location	**Function modes**	**Validation**
7 1	1 or 0	#
(1)	(2)	(3)

1. Location
   - Enter location 7 1
2. Function modes for notification tones: the Notification Tones are the beep tones including Successful Key entry signal (1 beep) and Unsuccessful User Code/Card entry signal (5 beeps). (Cfr. "Buzzer tones & led signals" on p.11 for more information).
   NOTE: The beeps for the Warning and the Power-up Delay are not notification tones and can not be turned OFF.
   - 1: **Notification tones ON** (default)
     All the Notification Tones available on the keypad are enabled. They are the response tones indicating the operation status of the keypad after a Card/User Code is entered.
   - 2: **Notification tones OFF**
     All the Notification Tones are OFF. Well suited for environments where silence is important.
3. Validation
   - Press the # key once. A double beep confirms the entry.

CHANNEL STATE ANNOUNCER (LOCATION 72)

Location	**Function modes**	**Validation**
7 2	1 or 0	#
(1)	(2)	(3)

1. Location
   - Enter location 7 2
2. Function modes for the Channel State Announcer: The Channel State Announcer emits a sound signal representing the status of the User Group channels. The Channel State Announcer signal is also OFF while the Notification Tone in Location 71 is set to OFF.

- $\boxed{0}$: **No notification**
  The channel state notification is OFF but the normal Notification tones are not affected (see location 71 above for those).
- $\boxed{1}$: **1 Second Notification** (default)
  A 1 second notification beep is emitted when the User Group channel activates. This notifies the person outside that the lock is released and the door can be opened. Well suited for door locks that emit no sound when activating, such as a magnetic lock.
- $\boxed{2}$: **2 Short Beeps notification**
  2 short beeps are emitted when the User Group channel activates.

3. Validation
   - Press the $\boxed{\#}$ key once. A double beep confirms the entry.

STATUS LED FLASHING DURING STANDBY (LOCATION 73)

Location	**Function modes**	**Validation**
$\boxed{7}\boxed{3}$	$\boxed{1}$ or $\boxed{0}$	$\boxed{\#}$
(1)	(2)	(3)

1. Location
   - Key in location $\boxed{7}\,\boxed{3}$
2. Function modes for standby flashing light: Some people find the flashing light of the status LED (the amber LED) annoying during standby, especially at night. The standby flashing can be switched on or off with this setting.
   - $\boxed{1}$: **Standby flashing ON** (default)
     The Status LED flashes during standby. It also indicates the operation status of the system.
   - $\boxed{0}$: **Standby flashing OFF**
     The Status LED does not flash to indicate standby, but other system status indications are not affected (cfr. "Buzzer tones & led signals" on p.11).
3. Validation
   - Press the $\boxed{\#}$ key once. A double beep confirms the entry.

DOOR FORCED OPEN WARNING (LOCATION 80)

Location	**Function modes**	**Validation**
$\boxed{8}\boxed{0}$	$\boxed{0}$ or $\boxed{1}-\boxed{9}\boxed{9}\boxed{9}$	$\boxed{\#}$
(1)	(2)	(3)

1. Location
   - Enter location $\boxed{8}\,\boxed{0}$
2. Function modes for Door Forced Open Warning: the Door Forced Open Warning works with a Door Position Sensing switch equipped on the door (usually a magnetic contact) and connected to the DOOR SENS input[9].
   - $\boxed{0}$: **Door Forced Open Warning OFF** (default)
   - $\boxed{1}-\boxed{9}\boxed{9}\boxed{9}$: **Door Forced Open Warning & Alarm ON (with duration selection)**
     The duration for the Warning can be 1-999 seconds. The keypad generates the door forced open warning beeps and activates the alarm output[10] instantly if the door is forced open without pressing the Egress Button[11] or without entering a valid User Code/Card. The beeps and alarm will last as long as the selected duration, they can be stopped at any moment by using a valid a User Code/Card in User Group 1.
3. Validation

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[9] see "DOOR SENS (Door Position Sensing Input -- Normally Closed)" on p.8

[10] see "ALM O/P (Alarm Output)" on p. 8

[11] see "Intelligent Egress Button – A unique feature of the keypad" on p.31

- Press the #️⃣ key once. A double beep confirms the entry.

DOOR PROPPED-UP WARNING (LOCATION 81)

Location	**Function modes**	**Validation**
8️⃣1️⃣	0️⃣ or 1️⃣ – 9️⃣9️⃣9️⃣	#️⃣
(1)	(2)	(3)

1. Location
   - Enter location 8️⃣1️⃣
2. Function modes for Door Propped-Up Warning: If the door remains open longer than the allowed delay duration, the keypad will generate a Door Propped-Up warning until the door is closed again. The keypad emits warning beeps only, it does not activate the alarm output. This function works with a door position sensing switch equipped on the door and connected to the DOOR SENS input[12].
   - 0️⃣: **Door Propped-Up Warning OFF** (default)
   - 1️⃣ – 9️⃣9️⃣9️⃣: **Door Propped-Up Warning ON (with delay selection in seconds)**
     The delay duration can be from 1 to 999 seconds. This is the allowed time for the door to remain open without triggering the alarm.
3. Validation
   - Press the #️⃣ key once. A double beep confirms the entry.

INTELLIGENT EGRESS BUTTON – A UNIQUE FEATURE OF THE KEYPAD

Introduction

Most keypads for access control are just for controlling "Going In" from the outside. This is not enough for today's access control systems. In fact, controlling "Going Out" is also very important in some public passage areas where the use of locks or digital keypads for preventing "Going Out" is not allowed due to safety reasons. Examples of these are hospitals, kindergartens, homes for the elderly, convenience stores, emergency exits etc. The wardens, teachers, shopkeepers and guards are always required to keep an eye on people in order to prevent unattended leaving, shoplifting, and unauthorized use of the emergency exits.

The Egress Button can be configured to attract the attention from the person on duty before the door is opened. The button offers a configurable egress delay with or without warning, a holding button mode with a configurable delay (which means that the button has to be pressed and held during a certain time before User Group 1 activates), a pulse button mode (a short press is sufficient to activate User Group 1), and can give an alarm when the door is opened.

The settings for the Egress Button are stored in memory location 90.

The Egress Button functions do not affect the normal operation of the keypad. The operation of the keypad with Code or Card always has the highest priority in instantly activating the User Group 1 channel.

For normal use the Egress button does not need to be configured, the settings can remain on their default values.

Use cases for an Egress Button and optional delays and alarms

Hospital

Some of the patients are not allowed to leave the ward without the doctor's permission. An egress button with an exit delay and warning beeps will help to attract the attention of the nurse or warden when the egress button is pressed. Setting a holding button mode with a delay for the egress button gives an even higher level of security for the controlled door.

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[12] see "DOOR SENS (Door Position Sensing Input -- Normally Closed)" on p.8

Kindergarten

Some children may want to go out of the kindergarten. Leaving school alone without the companion of parents or teachers is dangerous for young children. An egress button with a delay and warning beeps will be helpful to prevent the children trying to sneak out.

Elderly Home

Some elderly persons have poor memory. They may get lost if they leave the premises alone. An egress button with a delay and warning beeps will easily attract the attention of the warden before the door is open.

Convenience Store

Most convenience stores have only one or two shopkeepers on duty. Shoplifting may easily happen while the shopkeeper is busy serving customers. An egress button with a holding button mode, delay and warning beeps may help to stop most of the shoplifting, as the thief knows that they attracted the attention of the shopkeeper before the door is opened.

High Traffic Passage

A short buffer time may be necessary for opening a door outward after pressing the egress button for those exits opening to a high traffic passage. An egress button with a short delay and warning beeps helps the people outside to pay attention to the door opening, to prevent injuring them when the door is pushed outward.

Emergency Exit

An emergency exit is reserved for emergency cases only. The egress button can be programmed to offer an exit delay with warning beeps and even to activate an alarm output to trigger an alarm system when the door is forced open or remains open after the exit delay expired. This is a useful feature to attract the attention of the person on duty.

WARNING

Do not enable Egress Delay if your main concern is instantly opening the door for leaving.

Make sure the Egress Delay does not affect the safety in your service area before enabling the function in Location 90.

The default setting of the system is NO DELAY.

EGRESS MODE, DELAY, WARNING BEEP AND ALARM (LOCATION 90)

Location	**Configurations**	**Delay time**	**Validation**
9 0	1 - 6	0 or 1 – 9 9 9	#
(1)	(2)	(3)	(4)

1. Location
    - Key in location 9 0
2. Configurations of the Egress Warning and Alarm:
    - 1: **Pulse Mode, no Warning beeps, no Alarm** (default). In this mode, User Group 1 is activated after a short press on the Egress button. No warning or alarm is given during the Egress Delay. Well suited for a silent area. The people have to wait until the Egress Delay has expired for the door to open.
    - 2: **Pulse Mode with Warning Beeps, no Alarm**. In this mode, User Group 1 is activated after a short press on the Egress button. The keypad emits Warning beeps during the Egress Delay. Well suited for a place where attention is required. The keypad beeps during the delay, while people are waiting for the door to open.
    - 3: **Pulse Mode with Warning Beeps & Alarm**. In this mode, User Group 1 is activated after a short press on the Egress button. The keypad emits Warning Beeps and activates its Alarm Output[13] during the Egress Delay. Well suited for a door for authorized people only. This is usually an Emergency Exit. The door can be opened using the keypad/card reader without triggering the Warning and Alarm Output.

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[13] See "ALM O/P (Alarm Output)" on p.12

- $\boxed{4}$: **Holding Mode, no Warning beeps, no Alarm**. In this mode, User Group 1 is activated after pressing and holding the Button until the Egress Delay expires. No warning or alarm is given during the Egress Delay. Well suited for a silent area. In Holding mode it is required to press & hold the button until the Egress Delay expires for the door to open.
- $\boxed{5}$: **Holding Mode with Warning Beeps, no Alarm**. In this mode, User Group 1 is activated after pressing and holding the Button until the Egress Delay expires. The keypad emits Warning Beeps during the Egress Delay. Well suited for a place where attention is required. The keypad beeps while the button is kept pressed and the people are waiting for the door to open.
- $\boxed{6}$: **Holding Mode with Warning Beeps & Alarm**. In this mode, User Group 1 is activated after pressing and holding the Button until the Egress Delay expires. The keypad emits Warning Beeps and activates its Alarm Output[13] during the Egress Delay. This is usually an Emergency Exit. The door can be opened using the keypad/card reader without triggering the Warning and Alarm Output.

3. Egress Delay Timer
   - $\boxed{0}$: **No Delay** (default). User Group 1 channel activates instantly when the Egress Button is pressed.
   - $\boxed{1} - \boxed{9}\boxed{9}$: **Egress Delay Timing**. Enter a number in the 1-99 range to enable the Egress Delay. The number is the delay in seconds, which starts to count when the Egress Button is pressed. User Group 1 channel activates when the Egress delay expires.

NOTES:

1) **Pulse Mode**: The Egress Delay starts to count when the egress button is momentarily pressed. User Group 1 channel activates automatically when the delay expires.

2) **Holding Mode:** The user MUST hold the egress button for the whole period of the Egress Delay and only then User Group 1 channel activates. If the Egress button is released before the end of the Egress Delay, the timer will reset and User Group 1 channel will NOT be activated.

For safety reasons it is advised to put a sticker next to the Egress button explaining how to open the door if Holding Mode is enabled.

Example: A sticker for an egress button that is programmed with Holding Mode and an Egress Delay of 5 seconds.

Press & hold the button

for at least 5 seconds

until the door opens
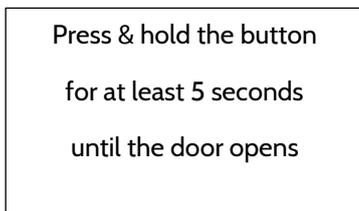
3) The Egress Delay does not affect the operation of the User Codes/Cards for User Group 1. The User Codes/Cards always give INSTANT action.

4. Validation
   - Press the $\boxed{\#}$ key once. A double beep confirms the entry.

Examples

Example 1

Set Egress Button in Pulse Mode with a 5 seconds Egress Delay & Warning beeps

$\boxed{9}\boxed{0}$ $\boxed{2}$ $\boxed{5}$ $\boxed{\#}$

(1)   (2)   (3)   (4)

1. Egress function programming
2. Pulse Mode with Warning Beeps
3. Delay time of 5 seconds before User Group 1 channel is activated

4. Entry confirmation

Example 2

Set Egress Button in Holding Mode with an Egress Delay of 10 seconds and Warning beeps

9 0	5	1 0	#
(1)	(2)	(3)	(4)

1. Egress function programming
2. Holding mode with Warning beeps
3. Egress Delay of 5 seconds before User Group 1 channel is activated (Egress button must remain pressed during the delay)
4. Entry confirmation

Example 3

Set Egress Button in Pulse Mode without delay (default setting)

9 0	1	0	#
(1)	(2)	(3)	(4)

1. Egress function programming
2. Pulse mode without delay
3. Instantly activate User Group 1 channel
4. Entry confirmation

EXIT PROGRAMMING MODE (* *)

Always exit programming mode with ⧆⧆ to set the keypad back to normal operation after programming.

Validation

⧆⧆

Keypad is back to normal operation mode.

PROGRAMMING SUMMARY CHART

LOCATION	FUNCTION	ENTRY LIMITS & CODE OPTIONS	CODE ENTRY	FACTORY DEFAULT
01	Master Code		0 1 MASTER CODE #	NIL
02	Super User Code	4-8 digits	0 2 SUPER USER CODE #	NIL
03	Common User Code for User Group 1		0 3 COMMON USER CODE 1 #	NIL
04	Common User Code for User Group 2		0 4 COMMON USER CODE 1 #	NIL
10	User Codes/Cards for User Group 1	CODE 1: MEDIA 1: EM Card 2: Private User Code 3: EM Card + Secondary User Code 4: EM Card + Common User Code 5: Deletion of User Code	1 0 CODE 1 CODE 2 CODE 3 #	NIL
20	User Codes/Cards for User Group 2	CODE 2: USER ID 000-999: Group 1 (location 10) 001-100: Group 2 (location 20) CODE 3: USER CODES/CARDS 4-8 Digits or Read EM Card	2 0 CODE 1 CODE 2 CODE 3 #	NIL
40	Visitor Codes	CODE 1: VISITOR ID 01-50 CODE 2: VALID PERIOD 00: One time 01-99 hours CODE 3: Visitor Code 4-8 digits	4 0 CODE 1 CODE 2 CODE 3 #	NIL
41	Duress Code for User Group 1	CODE ID 01-50 DURESS CODE: 4-8 digits	4 1 CODE ID DURESS CODE #	NIL

| LOCATION	FUNCTION	ENTRY LIMITS & CODE OPTIONS	CODE ENTRY	FACTORY DEFAULT
42	Duress Code for User Group 2	CODE ID 01-10 DURESS CODE: 4-8 digits	`4` `1` CODE ID DURESS CODE `#`	NIL
60	Personal Safety & Lock-Up	LOCK-UP CODE 1: after 10 trials, lock-up 60s 2: after 10 trials, activate duress output 5-10: after 5-10 trials, lock-up 15 minutes 00: no lock-up	`6` `0` LOCK-UP CODE `#`	1 (60s lock-up after 10 trials)
70	Code Entry Mode	ENTRY MODE 1: Auto Mode 2: Manual Mode	`7` `0` ENTRY MODE `#`	2 (Manual)
71	Notification Tone ON-OFF	MODE 0: OFF 1: ON	`7` `1` MODE `#`	1 (ON)
72	Channel status announcer ON-OFF	MODE 0: Notification 1: Beep 1s 2: 2 short beeps	`7` `2` MODE `#`	1 (Beep 1s)
73	Standby LED flashing	MODE 0: OFF 1: ON	`7` `3` MODE `#`	1 (ON)
80	Door forced open warning & duration	MODE/TIME 0: OFF 1-999: duration of warning in seconds	`8` `0` MODE/TIME `#`	0 (OFF)
81	Propped-up warning & duration	MODE/TIME 0: OFF 1-999: duration of warning in seconds	`8` `1` MODE/TIME `#`	0 (OFF)

LOCATION	FUNCTION	ENTRY LIMITS & CODE OPTIONS	CODE ENTRY	FACTORY DEFAULT
90	Egress mode, delay warning beep and alarm	CODE 1: FUNCTION MODE 1: Pulse mode, no warning 2: Pulse mode, with warning beep 3: Pulse mode, with warning beep & alarm 4: Holding mode, no warning beep 5: Holding mode, with warning beep 6: Holding mode, with warning beep & alarm CODE 2: DELAY TIME 0: no delay 1-99: delay in seconds between button press and User Group 1 channel activation	9 0 CODE 1 CODE 2 #	1 (Momentary mode, no warning beep, no delay)

SYSTEM CODE	FUNCTION	CODE ENTRY	RESULTS
0 0 0 0	MASTER CODE Factory set Master Code (to set keypad in programming mode). THIS IS NOT A PERMANENT SYSTEM CODE, IT NO LONGER EXISTS WHEN A NEW MASTER CODE IS PROGRAMMED BY THE USER.	0 0 0 0 * * OR NEW MASTER CODE * *	System in Programming Mode
9 9 9 9	REFRESH CODE Refresh the system and set all parameters back to default values (except Master Code).	9 9 9 9 #	All programmed data are cleared & all values are reset to default values except the Master Code.
2 8 2 8	DAP CODE Direct Access to Programming code. Valid only during the power-up delay period.	2 8 2 8 #	System in Programming Mode

SYSTEM CODE	FUNCTION	CODE ENTRY	RESULTS
0 9 9 9	CLEAR USER CODES/CARDS FOR THE SELECTED LOCATION LOCATIONS: 10: User Group 1 20: User Group 2 40: Visitor Group 41: Duress Group 1 42: Duress Group 2	LOCATION 0 9 9 9 #	Whole group of users cleared for the selected location
* *	EXIT PROGRAMMING CODE	* *	System back to normal operation after programming

APPLICATION HINTS FOR THE AUXILIARY TERMINALS

DOOR SENS
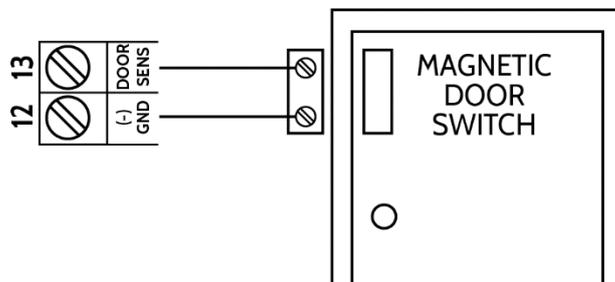
Use a Normally Closed door position sensor (usually a magnetic door switch) on the door to set up the following functions:

Door Auto Relock

The system will immediately deactivate the User Group channel after the door closes again to prevent "tailgate" entries. This function is automatically active and needs no additional configuration.
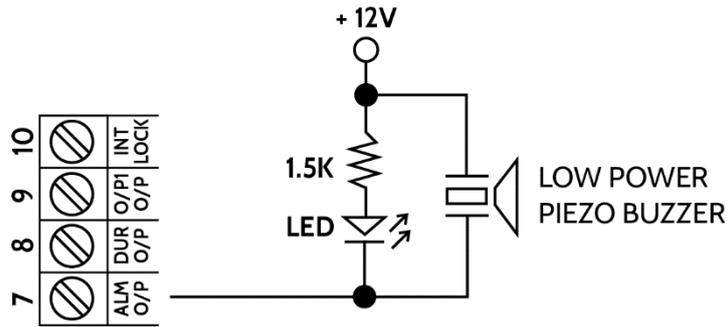
Door Forced-open Alarm

The keypad will emit warning beeps and close the ALM O/P[14] instantly if the door is forced open. Enable the function at Location 80. For more information see "Door forced open warning (location 80)" on p.30.
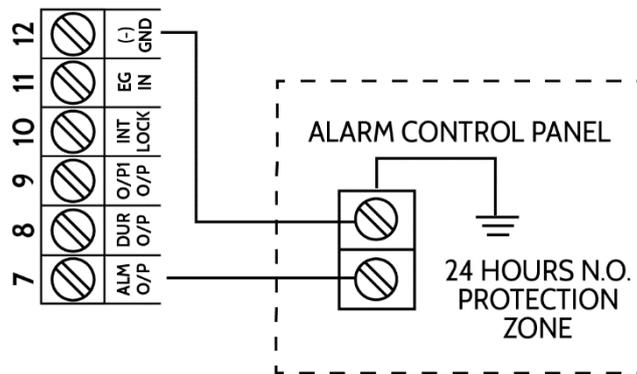
Door Propped-up Alarm

The keypad will emit warning beeps and close the ALM O/P[14] if the door is left open longer than the pre-set delay time. Enable the function at Location 81. For more information see "Door propped-up warning (location 81)" on p.31.

[14] Cfr. "ALM O/P (Alarm Output)" on p.10
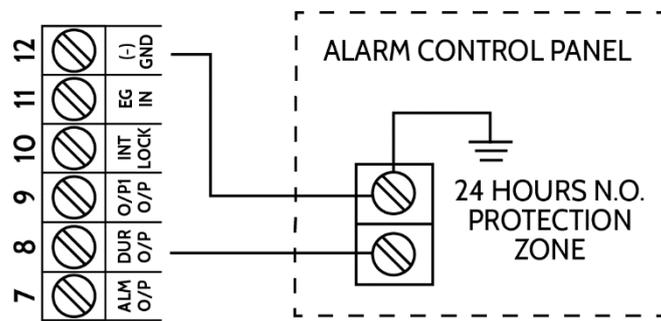
ALARM OUTPUT

OR

The Alarm Output (ALM O/P) can switch to (-) ground when the door is forced open, remains propped up or when the door opens after the Egress Delay. You may use it for instance to turn ON a LED lamp and/ or a small buzzer to notify a guard; or connect it to a 24 hour Normally Open protection zone of an alarm system. See "Door forced open warning (location 80)" on p.30, "Door propped-up warning (location 81)" on p.31 and "Egress mode, delay, warning beep and alarm (location 90)" on p.32 for more information about these functions.

Make sure that the sink current does not exceed the maximum rating of 100mA.

DURESS OUTPUT
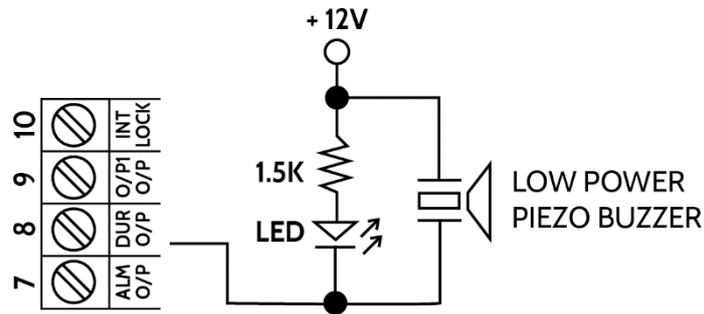
OR

The Duress Output (DUR O/P) switches to (-) ground when the Duress Code is entered. It can for instance be used to turn ON a LED lamp and/ or a small buzzer to notify a guard; or it can be connected to a 24 hour Normally Open protection zone of an alarm system. See "Duress codes (for user groups 1 & 2) (locations 41 & 42)" on p.25 for more information.

It is recommended to use only one connection option. Make sure that the sink current does not exceed the maximum rating of 100mA.

AUXILIARY INFORMATION

DRY CONTACT

A dry contact means a contact for opening or closing electrical circuits that does not supply voltage.

N.C.

Normally Closed, the contact is closed at rest and open when active.

N.O.

Normally Open, the contact is open at rest and closed when active.

TRANSISTOR OPEN COLLECTOR OUTPUT

An open collector output is equivalent to a Normally Open (N.O.) contact referring to ground, similar to a relay contact referring to ground. The transistor is normally OFF, and its output switches to ground (-) when active. The open collector can only provide switching function for very low power uses but it is usually good enough for controlling an alarm system. The Duress and Alarm Outputs of the keypad are open collector outputs.
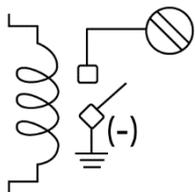
Open collector output

Output switches to ground when activated
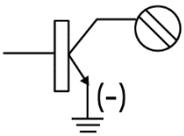
Equivalent N.O. contact output

Output switches to ground when activated

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