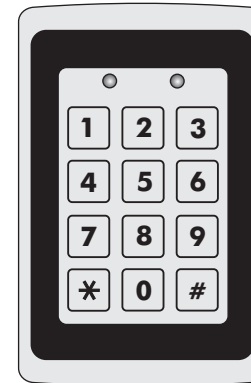


ROSSLARE

INSTRUCTION MANUAL



AY-Q64

**PROX & KEYPAD READER
WIEGAND AND CLOCK & DATA**

ROSSLARE
www.rosslare.com.hk

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InteliDoor 
Smart Access Control

08/01

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Introduction

The AY-Q64 is a vandal resistant programmable Wiegand and Clock & Data proximity card and keypad reader. The AY-Q64 supports multiple Proximity Card and Keypad formats providing a high level of compatibility and connectivity with host controllers.

The unit can be programmed to output proximity card data in either 26-Bit Wiegand or Clock & Data format.

The keypad can also be programmed to output eight different data formats.

Equipment provided

The following is provided as part of every AY-Q64 package:

- AY-Q64 Access Control Unit.
- Installation Kit
- Installation and Operating Instructions

Additional Equipment Required

1) Compatible Host Controller

2) Power Supply

5 to 16V DC (From a Regulated Power Supply)

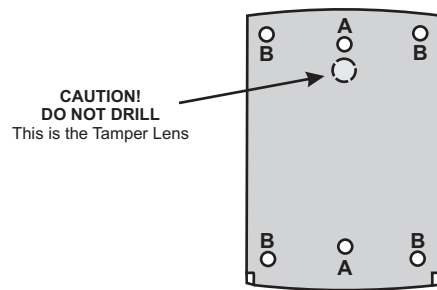
Other Rosslare accessories can be found at Rosslare's Web Site:

<http://www.rosslare.com.hk>

Installation

Mounting the AY-Q64 Controller

- 1) Before starting, select the location to mount the AY-Q64 reader. This location should be at shoulder height.
- 2) Drill holes into the back of the metal according to how you want to mount the AY-Q64. For US Gang Box installation there are two hole indicators on the back of the metal cover specifically aligned for the US Gang Box. (Shown marked as "A" in diagram below). For a four Screw Custom installation there are four indicators on the back. (Shown marked as B on the diagram below)



- 3) Route the interface cable from the Reader to the Controller. A linear type power supply is recommended.
- 4) Screw the AY-Q64 back cover to its mounting location.
- 5) Return the front cover of the AY-Q64 to the mounted back plate.
- 6) Secure the front cover by using the supplied security screw in the controller's Installation Kit. An L-Shaped tool is provided for use when tightening the security screw.

Wiring the AY-Q64

The reader is supplied with a 16-inch pigtail, having a 6-conductor cable. To connect the reader to the Controller, perform the following steps.

- 1) Prepare the reader cable by cutting the cable jacket back 1¼ inches and strip the wire ½ inch. Prepare the controller cable by cutting the cable jacket back 1¼ inches and strip the wire ½ inch.
- 2) Splice the reader pigtail wires to the corresponding controller wires and cover each connection.

Table shows how you should wire the Reader to the controller.

COLOR	OUTPUT
Red	+V DC
Black	Ground
White	Data 1 / Clock
Green	Data 0 / Data
Brown	LED Control
Purple	Tamper

- 3) If the tamper output is being utilized, connect the purple wire to the correct input on the controller.
- 4) Trim and cover all conductors that are not used.

Transmit Mode

When the AY-Q64 is in Transmit Mode, it is ready to receive data from a presented Proximity Card or an entered PIN code.

When the reader is in Transmit Mode, the Transmit LED is red and the Program LED is off



When a Proximity Card or Keyboard entry is being transmitted, the Transmit LED will flash green.

Keyboard data can be sent via one of eight different Keypad Transmission Formats. (Refer to page 13 for more information on Selecting Keypad Transmission Formats")

Proximity Cards presented to the reader are always sent in either 26-Bit Wiegand or Clock & Data formats. (Refer to page 19 for more information on "Selecting Proximity Card Transmission Formats")

Programming the AY-Q64

Programming the AY-Q64 is done solely via the unit's keypad driven Programming Menu System. To reach the Programming Menu System the AY-Q64 must first be placed into Programming Mode. See "Entering Programming Mode" on the next page for more information.

During the AY-Q64's manufacturing process certain codes and settings are pre-programmed. These settings are the called the "Default Factory Settings".

The table below shows the names of all the AY-Q64 Menus.

Programming Menu

Menu Description	Menu Number
Selecting Keypad Transmission Format	1
1) Single Key, 6-Bit Wiegand (Rosslare Format)	
2) Single Key, 6-Bit Wiegand with Nibble + Parity Bits	
3) Single Key, 8-Bit Wiegand, Nibbles Complemented	
4) 4 Keys Binary + Facility Code, 26-Bit Wiegand	
5) 1 to 5 Keys + Facility Code, 26-Bit Wiegand	
6) 6 Keys BCD and Parity Bits, 26-Bit Wiegand	
7) Single Key, 3x4 Matrix Keypad	
8) 1 to 8 Keys BCD, Clock & Data Single Key,	
Selecting Proximity Card Transmission Format	2
1) 26-Bit Wiegand	
2) Clock & Data	
Changing the Programming Code	3
Changing the Facility Code	4
Return to Factory Default Settings	0

Entering Programming Mode

- 1) Press the "#" key for 2 seconds. **Transmit** **Program**
• Transmit LED will turn off
• Program LED will turn red

- 2) Enter your 4-digit Programming Code.

If the Programming Code is valid the door LED will turn green and the AY-Q64 will be in Programming Mode. **Transmit** **Program**
GREEN

Note: - The factory default Programming Code is 1234
- If a Programming Code is not entered within 30 seconds, the AY-Q64 will return to Transmit Mode.

Exiting Programming Mode

- 1) To exit the Programming Mode at any time:

Press the "#" key. **Transmit** **Program**
GREEN

- You will hear a beep
- The Program LED will be off
- The Transmit LED will turn green

This indicates that the AY-Q64 has returned to Transmit Mode.

- 2) Wrong entries may reset the reader back to Transmit Mode.
- 3) While in Programming Mode if no key is pressed for 30 seconds the AY-Q64 will exit Programming Mode and return to Transmit Mode.

Selecting Keypad Transmission Format

The AY-Q64 has eight different keypad transmission formats to select from. Follow the steps below to select the appropriate keypad transmission format that you wish to use.

- 1) Enter Programming Mode

Transmit **Program**
GREEN

- 2) Press "1" to enter **Menu 1**

- The Transmit LED will turn red

Transmit **Program**
RED GREEN

- 3) Enter the appropriate option number for the keypad transmission format that you wish to select.

If an incorrect option number is entered the reader will return to Transmit Mode and the keypad transmission format will remain unchanged.

Look on the next page for more information on the keypad transmission formats.

- 4) System returns to Transmit Mode

- You will hear one beep
- The Program LED will turn off
- The Transmit LED will turn red

Transmit **Program**
RED

Note: - Only one keypad transmission format can be active at any one time.

- When using the keypad transmission format "1 to 8 keys BCD, Clock & Data" (Option 8) an additional input is required to specify the number of keys in the PIN code.

Keypad Transmission Format Option Number

See the table below to determine the Option Number for the Keypad Transmission Format you wish to select.

Keypad Transmission Format	Option Number
Single Key, 6-Bit Wiegand (Rosslare Format)	1
Single Key, 6-Bit Wiegand with Nibble + Parity Bits	2
Single Key, 8-Bit Wiegand, Nibbles Complemented	3
4 Keys Binary + Facility Code, 26-Bit Wiegand	4
1 to 5 Keys + Facility Code, 26-Bit Wiegand	5
6 Keys BCD and Parity Bits, 26-Bit Wiegand	6
Single Key, 3x4 Matrix Keypad	7
1 to 8 Keys BCD, Clock & Data Single Key,	8

More information on each of the different keypad transmission formats is available below and on the following pages.

OPTION 1 Single Key, 6-Bit Wiegand (Rosslare Format)

Each key press immediately sends 4 bits with 2 parity bits added. Even parity for the first 3 bits and odd parity for the last 3 bits.

0 = 1 1010 0	6 = 1 0110 0
1 = 0 0001 0	7 = 1 0111 1
2 = 0 0010 0	8 = 1 1000 1
3 = 0 0011 1	9 = 1 1001 0
4 = 1 0100 1	* = 1 1011 1 = "B" in Hexadecimal
5 = 1 0101 0	# = 0 1101 1 = "C" in Hexadecimal

OPTION 2 Single Key, 6-Bit Wiegand, Nibble & Parities

Each key press immediately sends 4 bits with 2 parity bits added. Even parity for the first 3 bits and odd parity for the last 3 bits.

0 = 0 0000 1	6 = 1 0110 0
1 = 0 0001 0	7 = 1 0111 1
2 = 0 0010 0	8 = 1 1000 1
3 = 0 0011 1	9 = 1 1001 0
4 = 1 0100 1	* = 1 1010 0 = "B" in Hexadecimal
5 = 1 0101 0	# = 1 1011 1 = "C" in Hexadecimal

OPTION 3 Single Key, 8-Bit Wiegand, Nibbles Complemented

Inverts the most significant bits in the message leaving the least 4 significant bits as Binary-Coded Decimal (BCD) representation of the key. The host system receives an 8-bit message.

0 = 11110000	6 = 10010110
1 = 11100001	7 = 10000111
2 = 11010010	8 = 01111000
3 = 11000011	9 = 01101001
4 = 10110100	* = 01011010 = "A" in Hexadecimal
5 = 10100101	# = 01001011 = "B" in Hexadecimal

OPTION 4 4 Keys Binary + Facility Code, 26-Bit Wiegand

Buffers 4 keys and outputs keypad data with a three digit facility code like a standard 26-Bit card output.

The facility code is set in Programming Menu number four and can be in the range 000 to 254. The factory default setting for the facility code is 000. (See page 21 for more information on "Changing the Facility Code")

The keypad PIN code must be 4 digits long and can range between 0001 and 9999. On the fourth key press of the 4 digit PIN code, the data is sent across the Wiegand Data lines as binary data in the same format as a 26-Bit Card.

If the "*" key or the "#" key are pressed during PIN code entry, the keypad will clear the PIN code entry buffer, generate a beep and is ready to receive a new 4 digit keypad PIN code.

If the entry of the 4 digit keypad PIN code is disrupted and no number key is pressed within 5 seconds, the keypad will clear the PIN code entry buffer, generate a beep and is ready to receive a new 4 digit keypad PIN code.

(EP) FFFF FFFF AAAA AAAA AAAA AAAA (OP)

Where: EP = Even parity for first 12 bits.
OP = Odd parity for last 12 bits.
F = 8-Bit Facility Code.
A = 24-Bit code generated from keyboard.

OPTION 5 1 to 5 Keys + Facility Code, 26-Bit Wiegand

Buffers up to 5 keys and outputs keypad data with a facility code like a 26-Bit card output.

The facility code is set in Programming Menu number four and can be in the range 000 to 254. The factory default setting for the facility code is 000. (See page 21 for more information on "Setting the Facility Code")

The keypad PIN code can be one to five digits long and can range between 1 and 65,535. When entering a keypad PIN code that is less than 5 digits long, the "#" key must be pressed to signify the end of PIN code entry. For keypad PIN codes that are 5 digits long, on the fifth key press of the 5 digit PIN code, the data is sent across the Wiegand Data lines as binary data in the same format as a 26-Bit Card.

If the "*" key or the "#" key are pressed during PIN code entry or a PIN code greater than 65,535 is entered, the keypad will clear the PIN code entry buffer, generate a beep and is ready to receive a new 4 digit keypad PIN code.

If the entry of the 1 to 5 digit keypad PIN code is disrupted and no number key or "#" key is pressed within 5 seconds, the keypad will clear the PIN code entry buffer, generate a medium length beep and is ready to receive a new 1 to 5 digit keypad PIN code.

(EP) FFFF FFFF AAAA AAAA AAAA AAAA (OP)

Where: EP = Even parity for first 12 bits.
OP = Odd parity for last 12 bits.
F = 8-Bit Facility Code.
A = 24-Bit code generated from keyboard.

OPTION 6 6 Keys BCD and parity bits, 26-Bit Wiegand

Sends buffer of 6 keys, adds parity and sends a 26-Bit Binary-Coded Decimal (BCD) message. Each key is a four bit equivalent of the decimal number.

The keypad PIN code must be 6 key presses long. On the sixth key press of the 6 digit PIN code, the data is sent across the Wiegand Data lines as a BCD message.

If the entry of the 6 digit keypad PIN code is disrupted and no number key is pressed within 5 seconds, the keypad will clear the PIN code entry buffer, generate a medium length beep and is ready to receive a new 6 digit keypad PIN code.

(EP) AAAA BBBB CCCC DDDD EEEE FFFF (OP)

Where:
A = The first key entered. D = Fourth key entered.
B = Second key entered. E = Fifth key entered.
C = Third key entered. F = Sixth key entered.

OPTION 7 Single Key, 3x4 Matrix Keypad (MD-P64)

This unique mode is intended to let the host controller scan the AY-Q64's keypad while still keeping the proximity card readers 26-Bit Wiegand or Clock & Data formats active.

An optional interface board must be used between the AY-Q64 and the host system. Each key press is immediately sent on DATA0 as an ASCII character at a baud rate of 9600 bits per second.

When a key is pressed DATA1 is pulled "low" until the key is released at which point DATA1 will be set to "high". This allows the controller to detect the duration of the key press.

The MD-P64 interface unit outputs the data received to 7 outputs emulating a keyboard. The interface unit will not effect any data that it receives from the proximity reader whether it is 26-Bit Wiegand or Clock & Data.

Key pressed = ASCII Value

0 = '0' (0x30 hex)	6 = '6' (0x36 hex)
1 = '1' (0x31 hex)	7 = '7' (0x37 hex)
2 = '2' (0x32 hex)	8 = '8' (0x38 hex)
3 = '3' (0x33 hex)	9 = '9' (0x39 hex)
4 = '4' (0x34 hex)	* = '*' (0x2A hex)
5 = '5' (0x35 hex)	# = '#' (0x23 hex)

OPTION 8 1 to 8 Keys BCD, Clock & Data

Buffers up to 8 keys and outputs keypad data without a facility code like standard Clock and Data card output.

The keypad PIN code can be one to eight digits long. The PIN code length is selected while programming the reader for Option 8. The reader will transmit the data when it receives the last key press of the PIN code. The data is sent across the two data output lines as binary data in Clock & Data format.

If the "*" key or the "#" key are pressed during PIN code entry, the keypad will clear the PIN code entry buffer, generate a beep and is ready to receive a new keypad PIN code.

If the entry of the digit keypad PIN code is disrupted and no number key or "#" key is pressed within 5 seconds, the keypad will clear the PIN code entry buffer, generate a medium length beep and is ready to receive a new keypad PIN code.

Selecting Proximity Card Transmission Format

The AY-Q64 has two different keypad transmission formats to select from. Follow the steps below to select the appropriate Proximity Card reader transmission format that you wish to use.

1) Enter Programming Mode Transmit Program
GREEN

2) Press "2" to enter **Menu 2**

2

- The Transmit LED will turn green

Transmit Program
GREEN GREEN

3) Enter the appropriate option number for the proximity card transmission format that you wish to select. (See options below)

?

If an incorrect option number is entered the reader will return to Transmit Mode and the keypad transmission format will remain unchanged.

4) System returns to Transmit Program
Transmit Mode RED







- You will hear one beep
- The Program LED will turn off
- The Transmit LED will turn red

Proximity Card Transmission Format Option Number

OPTION 1 26-Bit Wiegand







OPTION 2 Clock & Data

Changing the Programming Code

- 1) Enter Programming Mode  Transmit Program
GREEN
 - 2) Press "3" to enter **Menu 3** 
 - The Transmit LED will flash red. Transmit  Program
RED GREEN
 - 3) Enter the new 4-digit code you wish to set as the Programming Code 
 - 4) System returns to Transmit Mode  Transmit Program
RED
- You will hear one beep
 - The Program LED will turn off
 - The Transmit LED will turn red

Note: - Programming Code can not be erased, i.e. the code 0000 is not valid and will not erase the Programming Code.

Changing the Facility Code


- 1) Enter Programming Mode  Transmit Program
GREEN
 - 2) Press "4" to enter **Menu 4** 
 - The Transmit LED will flash orange. Transmit  Program
ORANGE GREEN
 - 3) Enter the new 3-digit code you wish to set as Facility Code 
 - 4) System returns to Transmit Mode  Transmit Program
RED
- You will hear one beep
 - The Program LED will turn off
 - The Transmit LED will turn red

Note: - Facility codes can be in the range of 000 to 254.

Return to Factory Default Settings

Warning:

You must be very careful before using this command! Doing so will erase the entire memory which includes all User and Special Codes, and return all codes to their factory default settings.

- 1) Enter Programming Mode  Transmit Program
GREEN

- 2) Press "0" to enter **Menu 0**
- The Transmit LED will flash red
 - The Program LED will flash red

- 3) Enter your 4-digit Programming Code.



- If the Programming Code is valid, all memory will be erased, you will hear three beeps and the controller will return to Normal Mode
- If the Programming Code is invalid you will hear a long beep and the controller will return to Normal Mode without erasing the memory of the controller.

Replacing a lost Programming Code

In the event that the Programming Code is forgotten, the AY-Q64 may be reprogrammed in the field using the following instructions:

- 1) Remove power from the reader.
- 2) Activate tamper by removing the reader from the wall or removing the reader's case.
- 3) Apply power to the reader.
- 4) You now have 10 seconds to enter Programming Mode using the factory default Programming Code 1234.

Technical Support

International Web Site:

<http://www.rosslare.com.hk/support/>

Asia, Australia, & South America:

Rosslare Enterprises Ltd.
905-912 Wing Fat Industrial Bldg.,
12 Wang Tai Road, Kowloon Bay,
Hong Kong.

Tel: (852) 2795 5630
Fax: (852) 2795 1508
E-mail: info@rosslare.com.hk

Europe, Russia, Middle East, Africa:

Rosslare Security Products S.r.l
Via F.lli Gabba 5, 20121 Milano, Italy

Tel: (39) 0382 24800
Fax: (39) 0382 24800
E-mail: marco.rogante@tin.it
rosslarect@aol.com

United States and Canada:

Rosslare NAPDC
200 East Howard Street, Suite 238,
Des Plaines, IL 60018
USA

Tel: (847) 827 6330
Fax: (847) 827 6433
E-mail: support@rosslare.net