VANDERBILT

Card reader

ARS6311-RX

Configuration Manual

Vanderbilt International (IRL) Ltd.

Liefermöglichkeiten und technische Änderungen vorbehalten.
Data and design subject to change without notice. / Supply subject to availability.

Contents

1 Safety regulations and warnings

- The unit must only be used for the purpose intended by the manufacturer.
- The configuration manual must be kept to hand and made available to every user.
- Unauthorized changes and the use of spare parts and accessories which are not sold or recommended by the manufacturer of the unit could cause fire, electric shock or injury. Therefore, such measures will result in a renunciation of liability and the manufacturer will not accept any guarantee claims.
- The manufacturer's guarantee terms in the version valid at the time of the sale are applicable to the unit. No liability will be accepted for unsuitably or incorrectly set parameters – whether automatic or manual – or for inappropriate use of the unit.
- All repairs must be carried out by the manufacturer.
- The user is responsible for ensuring that the unit is set up and connected in accordance with the recognized technical regulations in the country of installation and any other guidelines valid in the relevant region.
- Before opening the unit, always switch off the power supply and take measurements to ensure that there is no power to the unit.
- If an operating display goes out, this does not necessarily mean that the unit is disconnected from the mains and has no power. If you are working on an open device, remember that live components may be exposed.

2 Approval

If used according to the instructions, this radio system meets the basic requirements of article 3 and the remaining applicable conditions of the R&TTE directive 99/4/EC.

3 Technical Specifications

Card reader ARS6311-RX	
Input voltage	10 - 15 V DC
Current consumption	40 mA
Anti-sabotage protection (tamper)	NC contact, 50 mA / 24 V
Reading distance	Up to 12 cm for ISO cards (depends on cards)
Proximity cards	– UNIQUE EM 125 kHz (EM4100/4102 compatible) – CerPass / SiPass – Miro
Communication distance	Max. 150 m, between ARS6311-RX and ACS6311
Temperature range	-25 °C to +60 °C
Relative humidity	10 to 95% (non-condensing)
Ingress protection	IP 65
Dimensions	100 x 40 x 25 mm
Cable length	400 mm
Weight	Approx. 110 g
Approvals	CE

I/O Board ACS6311	
Input voltage	10 – 16 V DC
Current consumption	100 mA (both relays activated)
Inputs	Two NO/NC inputs, internally pull-up
Outputs	Two relay outputs, NO/NC dry contact, Form C 1.5 A / 24 V DC/AC rated
Temperature range	-25 °C to +60 °C
Relative humidity	10 to 95% (non-condensing)
Dimensions	81 x 59 mm
Weight	Approx. 50 g
Approvals	CE

3.1 Ordering data

Card Reader ARS6311-RX	V24246-Z3900-A1
I/O Board ACS6311	V24246-Z4501-A1

For Offline operation, the I/O Board ACS6311 must be ordered additionally.

3.2 Scope of delivery

1 x card reader ARS6311-RX

1 x accessory bag (screws)

3 x configuration manual (en, de, fr)

4 General

4.1 Designed Function

The ARS6311-RX reader has been designed for use in access control installations as an indoor and outdoor proximity reader to enable user identification via EM 125 kHz UNIQUE standard proximity cards and SiPass-/CerPass cards. The ARS6311-RX can be configured for Stand-alone Mode (called OFFLINE Mode) or for use with an external Access Control Unit (ACU) supporting compatible data interface formats (ONLINE Mode).

The ARS6311-RX configured for ONLINE Mode works as a slave unit with its functions restricted down to reading cards and providing subsequent transmission of such collected data to the host ACU for further processing. The ARS6311-RX offers several data transmission formats available for use in ONLINE Mode, which include the popular Wiegand and Magstripe (i.e. simulation of output of a magnetic card reader) data protocols.

When configured for Stand-alone operation (OFFLINE Mode), an ARS6311-RX independently (i.e. autonomously) controls the supervised door access point. For this mode, it offers the option for communication with the external I/O Board ACS6311. An access control installation contains two ARS6311-RX (one at the entry, the other at the exit side of the door) enables two-way passage control. The system setup utilizing an ACS6311 provides higher level of security for access control by separating its logical element (the reader) from the actuator element controlling door lock (i.e. the door lock relay).

NOTE

When configured for Stand-alone Mode, an ARS6311-RX may be used in pair with another ARS series reader. In this setup both reader can provide two-way door control (entry and exit).

4.2 Features

Host-controlled mode (ONLINE Mode)

- 26/34/42 bit Wiegand data format interfaces
- Magstripe data format interface (ABA Track II emulation)
- LED/Buzzer control input

Stand-alone Mode (OFFLINE Mode)

- System settings stored in nonvolatile memory
- Enrolment of up to 120 users
- User indexing (ID indexed user records)
- Support for Door Contact (DC) and Request-To-Exit (REX) push button
- Door Alarm and Door Bell outputs
- Integration to intrusion alarm system through I/O's
- Entry/Exit control (requires two ARS6311-RX to form a pair)
- Built-in signals to ACS6311 I/O Board.

4.3 ONLINE Operation – Reader

The factory new ARS6311-RX unit is pre-configured for ONLINE operation mode with a Magstripe data format interface. For the ONLINE operation no further programming is required. Please refer to chapter 5 for installation and to chapter 6.1, if a change of the communication interface is needed.

4.4 Stand-alone Operation

4.4.1 Users

In Stand-alone Mode, the ARS6311-RX can register up to 120 users with cards and ID numbers (000–119). The ARS6311-RX precludes assignment of the same card to more than one user. User identification is done by verifying the card presented by a user.

The ARS6311-RX supports five types (classes) of users: Installer, Master, Normal, Toggle and Toggle LTD. The Installer and Master Users are intended for programming purposes only. The Normal Users are authorized to unlock the controlled door, but not to arm or disarm the reader. The Toggle Users are authorized both to unlock a controlled door and to switch the reader between ARMED/DISARMED Modes. The Toggle LTD Users are authorized to change ARMED/DISARMED Mode of the reader only, they are not authorized for door unlocking.

A new user can be registered in the reader following either a simple or a full programming procedure. The simple procedure consists in programming a card into the system without specifying the ID number of the user to whom the programmed card will belong — as a result the reader simply stores the programmed card with the unoccupied user ID number. The full programming procedure requires you to specify an ID number (memory location) for the new user to be programmed and then present his card.

NOTE

If you program some user using the full programming procedure you will be able later to selectively delete him simply by using a command with his ID number specified. You will not need to use his card for the command to take effect.

During initial programming, the user cards are saved to the terminal's memory in the order 000-119, i.e. the first user card will automatically have the ID number 000.

User Classes	Installer Programming	User Programming	Unlocking	Arm/Disarm
Installer	X			
Master		X		
Normal			X	
Toggle			X	X
Toggle LTD				X

- Installer card: General reader settings such as e.g. Door Lock Triggering Time.
- Master card: Creating and deleting user cards.
- Normal card: Employee cards for opening doors.
- Toggle card: Same as normal card plus arming/disarming
  (1st card badge: the door is opened, 2nd card badge: reader is armed).
- Toggle-LTD: only for arming/disarming
  (1st card badge: reader is armed immediately).
- Information: Once a reader has been armed, access with “normal cards” is no longer possible.

4.4.2 ARMED and DISARMED Mode

When in Stand-alone Mode the ARS6311-RX can be in any of the two operational modes available, either ARMED or DISARMED State. Its current mode is indicated by the reader's dual color LED STATUS, which lights in red for ARMED or green for DISARMED State. The DISARMED Mode can be additionally indicated via the Output Line (to enable this, activate the Reader Disarmed Output Option). Such configuration allows the Output Line to function as a driver to arm/disarm the connected alarm system or to operate (on/off) some other auxiliary systems or devices such as lights, heating hardware etc. In general, the reader's ARMED/DISARMED States have no effect on unlocking the door, unless the **Access Disabled When Reader Armed** option has been enabled (please refer to chapter 6.3 Installer Programming Mode). With this option activated, access to the supervised room can be granted only if the reader is in DISARMED State. Also by activating this option Toggle Users obtain capability to enable/disable access to the supervised room, plus it allows automatic locking upon a reader entering the ARMED State.

NOTE

Upon powering on, the reader automatically returns to the ARMED/DISARMED State it was in before powered off. Also the reader returns to its original ARMED/DISARMED State when returning from the User Programming Mode. After Memory Reset the reader always enters ARMED Mode.

4.4.3 Arming and Disarming of the Reader (re-arming)

Changing the reader's state from ARMED to DISARMED and back is called **re-arming** in this manual. The term "arming" should be understood as the action effecting a switch into the ARMED State, whereas the term "disarming" a switch into the DISARMED State.

The reader can be rearmed by Toggle or Toggle LTD Users. To rearm the reader a Toggle User is required to present twice a Toggle Card, whereas a Toggle LTD User needs only a single reading of his card.

With an Input Line configured to be used as **Arming Disabled Input**, the reader can be armed only if the Input Line is not triggered (passive state). Consequently, when **Arming Disabled Input** is triggered (active state) the ARS6311-RX will reject any attempt to arm the reader. Typically the reader's **Arming Disabled Input** line should be wired to the Alarm System Control Unit's output designed to indicate that the Alarm System is not ready for arming ("Ready Output" on an Alarm System Control Panel).

Example: Rearming the reader by using a Toggle User card

- Read your Toggle user card: if the card is accepted the reader grants you access and its LED SYSTEM starts blinking.
- With the LED SYSTEM is blinking, present your Toggle card one more time. This makes the reader change its arming state (the LED STATUS change its color).

NOTE

With the **Access Disabled When Reader Armed** option activated and the reader is in ARMED Mode, to give access, first switch the reader to DISARMED Mode (use Toggle or Toggle LTD Card) and then use valid card to release the door.

4.4.4 Unlocking a Door

In order to unlock the door a user is required to present his card to the ARS6311-RX. Whenever this happens the reader activates its LED SYSTEM (orange) for a moment and generates a short confirmation beep. After successful identification the reader energizes the door lock for the predefined time (please refer to chapter 6.4.1. User Programming Commands, **Door Lock Triggering Time**). The lock activation is signaled on LED OPEN (green), which remains on for as long as the door lock is energized. When access to the supervised room is denied the reader generates a long beep. The access to a room can be rejected in the following situations:

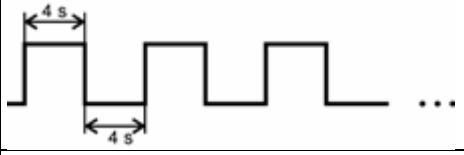
- When the presented card is not valid (unknown).
- When the presented card belongs to a Toggle LTD User.
- When the reader operates in ARMED Mode and the **Access Disabled When Reader Armed** option is active.

In the last case the Toggle or Toggle LTD User can read its card in order to switch the reader from ARMED to DISARMED Mode, thus re-enabling the reader to grant access to other users.

4.4.5 Alarms

The ARS6311-RX has been designed to detect and indicate the following alarm types: **Forced Door**, **Pre-alarm** and **Door Ajar** (Door Held). The alarm signaling is carried out over the dedicated **Alarm Output Line** and optionally on the Internal Buzzer (check the **Door Alarm Indication on Internal Buzzer** option in the configuration code in installer programming table, please refer to chapter 6.3 Installer Programming Mode). The device uses different alarm signal modulation, depending on alarm type (see table below). Alarm duration is 3 minutes, regardless of alarm type. Each alarm can be stopped manually within 3 minutes from its start by presenting any card registered in the reader. Additionally, a **Door Ajar** alarm (Door Held) is stopped as soon as the door is closed. If more than one alarm is triggered, the reader indicates the alarm with the highest priority. The **Forced Entry** and the **Door Ajar** alarms (Door Held) will occur only if the reader operates with a **Door Open Contact**.

Alarm Signaling Methods

Alarm type	Priority	Signaling method	Alarm situation (event)
Forced Door	High	By cycles with the following sequence: Active - 4 sec., pause - 4 sec. 	The door opened without use of a valid card or exit button.
Pre-alarm	Medium	By cycles with the following sequence: Active - 1 sec., pause - 1 sec. 	Detection of 3 consecutive attempts of entering an unregistered (unknown) card.
Door Ajar (Door Held)	Low	By cycles with the following sequence: active - 1 sec., pause - 1 sec., active - 1 sec., pause - 5 sec. 	After access has been granted and the door opened it is left ajar for the time exceeding the door open time setting (please refer to chapter 6.4.1. User Programming Commands).

NOTE

Modulation methods are used either for the **Alarm Output Line** or the **Internal Buzzer** (if configured).

4.4.6 Acoustic and Optical Signals

Acoustic Signals in Stand-alone Operation Mode		
Signal	Symbol	Description
One long signal	♫	Error - unknown card, access denied.
Two long signals	♫ ♫	Attempt to assign the same function for two different input lines.
Two bursts, each burst with 3 short beeps	♪♪♪ ♪♪♪	Command successfully completed (OK signal).
Two short beeps	♪♪	Prompt signal, the reader is waiting for the next part of the command to be entered. This signal is intended to invite the programmer to proceed with next programming steps.
One long signal continuously repeated	♫ ♫ ♫ ♫…and so on	Memory contents corrupted or Master/Installer Card not programmed - Memory Reset necessary. This signal is accompanied by the steady lit LED SYSTEM.
Legend: ♫ - one long audible signal ♪ - one short audible signal (beep)		

LED Indications in Stand-alone Operation Mode			
LED STATUS	LED OPEN	LED SYSTEM	Description
			
Green	—	—	The reader is in DISARMED State.
Red	—	—	The reader is in ARMED State.
Red	Green	—	The reader is in User Programming Mode.
Green	Green	—	The reader is in Installer Programming Mode.
—	—	Orange flashing	Waiting for the user to enter the next part of the command or programming function.
—	—	Orange, single flash	A user card has been read.
—	Green	—	The door lock is activated, this LED remains on as long as the door lock is energized.
—	Green flashing	—	The reader is waiting for a user to read his card (e.g. when Toggle Card is used to change ARMED/DISAMED Mode).
—	—	Steady	The reader has detected a problem (memory contents is corrupted or a Master/Installer Card is not programmed).

NOTE

When the ARS6311-RX operates with a second ARS6311-RX (for two-way control of the door) the LED indications on the second reader are synchronized.

5 Installation

The ARS6311-RX reader should be mounted near the supervised door on a vertical piece of supporting structure.

If you also use the ACS6311, this part has to be mounted in the secure area.

Disconnect power supply before making any electrical connections.

For installations on a metal surface, place a non-metallic min. 10 mm thick spacer (a plastic/plaster plate etc.) between the reader and the supporting structure (not included in delivery).

For installations with two readers mounted on opposite sides of the same wall and aligned along the same geometrical axis, place a metal plate between them and make sure none of them has direct contact with it (allow min. 10 mm space).

For best results mount the proximity readers at least 0.5 m apart.

When using separate power supply sources, connect all power supply negative (–) leads together.

We recommend to ground the negative (–) power supply lead.

With its relatively weak electromagnetic field generation, the terminal should not cause any harmful interference to operation of other equipment. However, its card reading performance can be affected by other interference generating devices, esp. radio waves emitting equipment or CRT computer monitors.

If card reading performance deteriorates (e.g. reduced reading range or incorrect readings) consider reinstallation in a new location.

Before the AR6311-RX will be mounted we suggest configure it for requested operating mode and program Master and Installer Cards.

A new factory delivered unit is configured for **Magstripe data format interface mode (ABA Track II emulation)**.

When lost, Master or Installer Cards can be reprogrammed to a reader.

The reader Operating Mode can be changed whenever required.

Always add a general purpose (e.g. 1N4007) silicon diode in parallel to a door lock.

5.1 Opening the housing

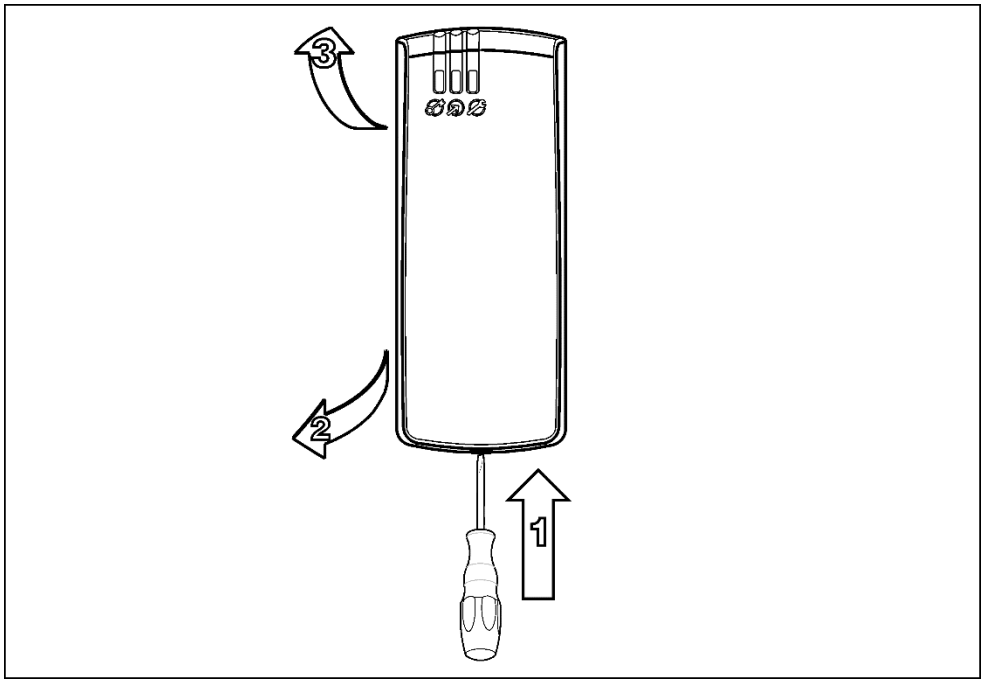


Fig. 1 Opening the housing

5.2 Mounting

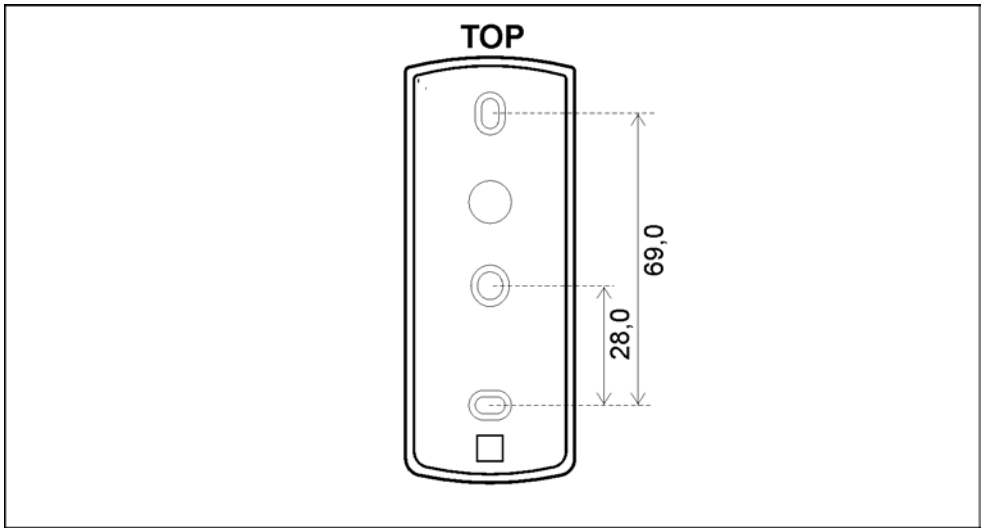


Fig. 2 Mounting direction

5.3 Connecting the reader

5.3.1 Ports

Wire Color	Function	Stand-alone Operation Mode	ONLINE Mode (unit connected to host ACU)
Red	+12 V	Supply input plus	
Blue	GND	Supply input minus	
Green	CLOCK	CLOCK communication line	DATA 0 line for Wiegand formats CLOCK for Magstripe format
Brown	DATA	DATA communication line	DATA 1 line for Wiegand formats DATA for Magstripe format
Yellow	IN1	Electric input (can be configured to several available functions).	In Wiegand and Magstripe formats (LED green), the IN1 line activated by shorting it with the supply minus (GND). When IN1 is triggered it turns the LED OPEN to ON and also activates acoustic signal on the Internal Buzzer.
Grey & White	TAMP	Tamper	
Pink	NC	Not used	

5.3.2 Wiegand Transmission Format

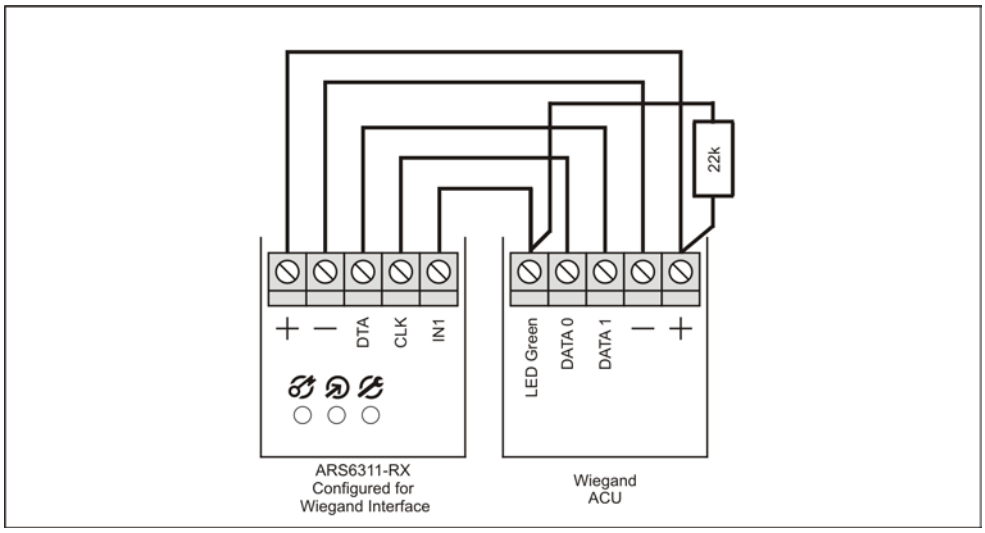


Fig. 3 Wiegand Transmission Format

When employing Wiegand transmission format, the data is transferred using sequences of pulses sent over the CLOCK and DATA lines. Depending on the selected version of the transmission format, the ARS6311-RX uses 26, 34 or 42 bits to transmit a data to a host.

NOTE

For card code length longer than the number of bits available in the selected data transmission format a ARS6311-RX reader omits the most significant bits of the data transmitted.

When Wiegand format is used, the dual color LED STATUS lights steady in red and the LED SYSTEM turns on for a short while with each reading of a card. The LED OPEN is controlled by the IN1 input line. When IN1 is shorted with the power supply negative lead the LED OPEN turns on and the Internal Buzzer sounds, when IN1 is shorted with the power supply positive terminal or is left unconnected the LED OPEN and the Buzzer is not active.

5.3.3 Magstripe Transmission Format

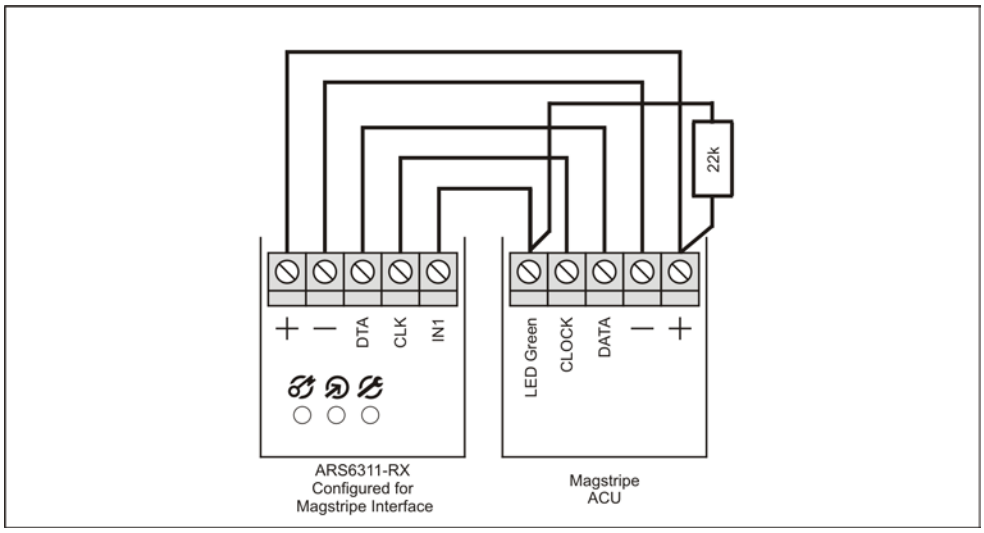


Fig. 4 Magstripe Transmission Format

When employing Magstripe transmission format, the data is transferred using electric signal waves transmitted over the CLOCK and DATA lines. The LED indicators and the buzzer are controlled in the same manner as described for Wiegand formats (see previous section).

In Magstripe format, the ARS6311-RX send the serial number of the card.

The default setting for ARS6311-RX is „ONLINE Mode Magstripe“.

As shown in Fig. 4, the ARS6311-RX can for instance be directly connected to SiPass RIM. (SiPass integrated reader technology “Siemens Clk/Data”).

5.3.4 Address setting

NOTE
There is no need for reader address setting in the reader itself.

6 Programming

Before the ARS6311-RX can start operation, it must be configured to adequate **Reader Operation Mode**. If the unit is set for any of the ONLINE operating modes, it does not require any further programming. If it is set for **Stand-alone Operation Mode** (OFFLINE), an installer will have to define any two cards for it, these are Master and Installer Cards, and then enter **Installer Programming Mode** and make any final settings required by specific installation. The programming of user cards can be done in **User Programming Mode** either by an installer or by an end user.

If the unit has not been properly prepared for operation, it may be produce the following indications:

- No acoustic signals and the LED SYSTEM is on – microprocessor memory error, the unit must be reloaded with the firmware to correct the problem.
- Short beeps (0.2 s) separated by 0.2 s pause and the LED SYSTEM is on – Reader Operating Mode has not yet been programmed.
- Long beeps (2 s) separated by 2 s pause and the LED SYSTEM is on – the data memory is corrupted or Master and Installer Cards have not yet been programmed.

The AR6311-RX can be programmed manually either in **Installer Programming Mode** or in **User Programming Mode**, always using the adequate **Programming Card**: use your **Master Card** when in User Programming Mode or use your **Installer Card** when in Installer Programming Mode.

The AR6311-RX can be programmed by multiple reading of the suitable Programming Card. The programming sequences consist of series of digits (0, 1…9) and special marks (* and #) and so, to simulate a [n] digit read your Programming Card n times (simply present it to the reader and take it back) and then wait 2…3 seconds for the reader to generate a special acoustic signal (♪♪) — this is a Prompt indicating that the reader has successfully accept the series of your card readings as an entry of a single digit or mark and is now ready for the next step of programming procedure. Here is how to program single digit (mark) on AR6311-RX:

Programmed digit or mark	**Your action**
[1]	Read 1 time your valid Programming Card.
[2]	Read 2 times your valid Programming Card.
[3]	Read 3 times your valid Programming Card.
[4]	Read 4 times your valid Programming Card.
[5]	Read 5 times your valid Programming Card.
[6]	Read 6 times your valid Programming Card.
[7]	Read 7 times your valid Programming Card.
[8]	Read 8 times your valid Programming Card.
[9]	Read 9 times your valid Programming Card.
[0]	Read 10 times your valid Programming Card.
[*]	Read 11 times your valid Programming Card.
[#]	Read 12 times your valid Programming Card.

NOTE

The programming of a reader can be done on a primary reader only. This rule is valid to both User and Installer Programming Modes.

6.1 Setting Reader Operation Mode

The ARS6311-RX provides two main modes of operation: ONLINE (reader) and OFFLINE (stand-alone). It also offers several other options which may modify those modes.

To select proper Operation Mode you have to program the adequate control code to a reader. The control code consists of two digits (marked as D1 and D2). For D1 and D2 coding details see table below. The Reader Operation Mode can be changed whenever required.

NOTE

The default setting is „ONLINE Mode MAGSTRIPE“ (Clock/Data).

Reader Operation Modes		
Control Code	Reader Operating Mode	Description
00	ONLINE Slave Mode Address ID=0	The reader operates as a slave reader connected to master ARS6311-RX. Use this mode for two-way door control systems.
04	OFFLINE Mode Stand-alone Mode	The reader operates as a Stand-alone Unit, its CLOCK and DATA lines are used for communication with an I/O Board ACS6311 set to address ID=5 and (optionally) with a secondary ARS6311-RX set to Online Slave Mode address ID=0.
20	ONLINE Mode MAGSTRIPE Communication Interface	The reader operates as a unit controlled by a host. This host-controlled mode requires the reader to be wired to a master ACU that requires Magstripe data format.
40	ONLINE Mode 26 bit WIEGAND Communication Interface	The reader operates as a unit controlled by a host. This host-controlled mode requires the reader to be wired to a master ACU that requires 26/34/42 bit Wiegand data format.
60	ONLINE Mode 34 bit WIEGAND Communication Interface	
50	ONLINE Mode 42 bit WIEGAND Communication Interface	

To configure Operation Mode for the ARS6311-RX follow these steps:

1. Important! Before starting configuration, select the code for the desired mode. See table above.
2. Power down the unit.
3. Remove all connections from DATA (bn) and IN1 (ye) lines.
4. Connect DATA (bn) to IN1 (ye).
5. Restore power, the reader generates a continuous beep.
6. Wait until the LED SYSTEM (orange) starts flashing.
7. Disconnect DATA (bn) from IN1 (ye).
8. Present any card n times for configuring first digit (D1) of the selected Operation Mode.
9. Wait until the reader generates two beeps (♪ ♪) as the prompt signal.
10. Present any card n times for configuring second digit (D2) of the selected Operation Mode.
11. Once the previous step has been completed the reader automatically ends the programming procedure and enters the Operation Mode.

Example:
Configuring the ARS6311-RX for Offline Mode - Stand alone Mode (Code 04)

1. Power down the unit.
2. Remove all connections from DATA (bn) and IN1 lines (ye).
3. Connect DATA (bn) to IN1 (ye).
4. Restore power, the reader generates a continuous beep.
5. Wait until the LED SYSTEM (orange) starts flashing.
6. Disconnect DATA (bn) from IN1 (ye).
7. Present 10 times any card (value for 0).
8. Wait for the prompt signal (♪ ♪).
9. Present 4 times any card (value for 4).
10. Once the previous step is completed the reader is configured for Offline Mode.

6.1.1 Troubleshooting

If the unit has not been properly prepared for operation, it may produce the following indications:

- No acoustic signals and the LED SYSTEM is on – microprocessor memory error, the unit must be reloaded with the firmware to correct the problem.
- Short beeps (0.2 s) separated by 0.2 s pause and the LED SYSTEM is on – **Reader Operation Mode** has not been programmed so far.
- Long beeps (2 s) separated by 2 s pause and the LED SYSTEM is on – the data memory is corrupted or Master and Installer Cards have not been programmed so far.

6.2 Define Master and Installer Cards - Memory Reset

The **Memory Reset** erases from the ARS6311-RX all cards including previous Master and Installer Cards. Also, it causes the reader to restore factory default settings. The **Memory Reset** is required only if the unit is configured for Stand-alone Mode.

To perform Memory Reset follow these steps:

1. Power down the unit.
2. Remove all connections from CLK (gn) and IN1 (ye) lines.
3. Connect CLK (gn) to IN1 (ye).
4. Restore power, the reader generates a continuous beep.
5. Wait until the LED OPEN (green) starts flashing.
6. Disconnect CLK (gn) from IN1 (ye).
7. Present any card to the reader — this card becomes a new **Master Card**.
8. Present **any other** card to the reader — this card becomes a new **Installer Card**.
9. Once the previous step has been completed the reader automatically ends the Memory Reset Procedure and enters ARMED Mode.

NOTE
Do not forget to inscribe the cards.

6.2.1 Default Settings

After Memory Reset the reader restores the following - default settings:

- Door lock triggering time: 4 sec.
- Time allowed to close a door: 12 sec.
- REL1 line function: **Door Lock Output**
- REL2 line function**: Reader Disarmed Output**
- Line IN1 (ye) on the reader: **Door Contact Input**
- Line IN1 on the ACS6311 module: **Exit Button Input**
- Line IN2 on the ACS6311 module: **Arming Disabled Input**
- Option **Door Alarm Indication on Internal Buzzer**: Option disabled.
- Option **Access Disabled When Reader Armed**: Option disabled.

6.3 Installer Programming Mode

Use this mode to configure various functionalities of the ARS6311-RX reader. You can enter it by presenting your Installer Card to the unit. Once in this mode the LED OPEN turns on and the LED STATUS lights green.

After entry to Installer Programming Mode, the reader waits for the installer to sequentially enter eleven digits labeled C1…C11. After entering the last one the reader saves all entered data, then exits the programming mode and returns to the operation mode (ARMED or DISARMED Mode) it was in before entering installer programming.

NOTE

As mentioned earlier programming of ARS6311-RX is achieved through multiple readings of an adequate Programming Card. Here, for programming of C1..C11 digits, the Installer Card has to be used.

NOTE

If you don't present the Installer Card within 20 s time the reader will leave programming mode without saving.

6.3.1 Configuration Default settings

Configuring the reader for the following set of installer's options:

Start programming using the installer card.

Enter the values for the parameters C1 to C11 successively. See section: 6.3.2 Configuration Example settings.

1. Door lock triggering time: 4 sec. (program C1C2=04)

2. Time allowed to close a door: 11 sec. (program C3C4=11)

3. REL1 line function: Door Lock Output. (program C5=4)

4. REL2 line function: Reader Disarmed Output. (program C6=5)

5. Line IN1 (ye) on the reader: Door Contact Input. (program C7=1)

6. Line IN1 on the ACS6311 module: Exit Button Input. (program C8=2)

7. Line IN2 on the ACS6311 module: Arming Disabled Input. (program C9=3)

8. Internal use only. No configuration necessary. (program C10=1)

9. Internal use only. No configuration necessary. (program C11=1)

Last step completes the programming and the reader automatically leaves Installer Programming Mode and returns to the operating mode (ARMED or DISARMED Mode) which it was in before entering Installer Programming Mode.

Default settings

Prefix (program code)	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
Value	0	4	1	1	4	5	1	2	3	1	1
Number of badges	10	4	1	1	4	5	1	2	3	0	1

6.3.2 Configuration Example settings

Example for the parameters C1 and C2:

The parameters C1 and C2 define the pick-up time of the door opener relay. If the card is presented 10 times when setting C1 (value=0) and 4 times when setting C2 value=4), the resulting pick-up time of the door opener relay will be 04 seconds.

In order to configure the reader to use the set of options C1-C11 listed above, perform the following steps:

Depending on the function, the values for C1-C11 have to be modified. See chapter: 6.3.3 List of the Installer Programming Modes.

1. Let the reader read your Installer Card once.

➔ The reader enters Installer Programming Mode, the LED OPEN is on and the LED STATUS lights green.

2. Present your Installer Card 10 times to the reader. (program C1=0)

➔ Wait for the acoustic prompt.

3. Present your Installer Card 2 times to the reader. (program C2=4)

➔ Wait for the acoustic prompt.

4. Present your Installer Card 1 time to the reader. (program C3=1)

➔ Wait for the acoustic prompt.

5. Present your Installer Card 1 time to the reader. (program C4=1)

➔ Wait for the acoustic prompt.

6. Present your Installer Card 4 times to the reader. (program C5=4)

➔ Wait for the acoustic prompt.

7. Present your Installer Card 5 times to the reader. (program C6=5)

➔ Wait for the acoustic prompt.

8. Present your Installer Card 1 time to the reader. (program C7=1)

➔ Wait for the acoustic prompt.

9. Present your Installer Card 2 times to the reader. (program C8=2)

➔ Wait for the acoustic prompt.

10. Present your Installer Card 3 times to the reader. (program C9=3)

➔ Wait for the acoustic prompt.

11. Present your Installer Card 1 time to the reader. (program C10=1)

➔ Wait for the acoustic prompt.

12. Present your Installer Card 1 time to the reader. (program C11=1)

➔ Wait for the acoustic prompt.

Last step completes the programming and the reader automatically leaves Installer Programming Mode and returns to the Operating mode (ARMED or DISARMED Mode) which it was in before entering Installer Programming Mode.

NOTE

Installer Programming Mode can be accessed only if the reader was earlier configured for Stand-alone Operation Mode.

6.3.3 List of the Installer Programming Modes

Parameter	Value	Description
C1 and C2	00–99	The C1 and C2 digits define time for which the reader activates the door lock when access is granted. The C1C2 digits are called **Door Lock Triggering Time,** the C1C2 time is defined in seconds. Note: When set to C1C2=00, each time the reader grants access the **Door Lock Output** is turned to the opposite condition (toggle mode). Also the C1C2=00 setting disables the **Door Ajar** alarm (Door Held).
C3 and C4	00–99	The C3 and C4 digits define **Time Allowed to Close the Door** (in seconds). If during this time the door is not closed the Door Ajar alarm (Door Held) will arise. The C3C4 timer is started immediately after the Door Lock Triggering Time (C1C2) has elapsed.
C5	0 – 7	Function settings for the REL1 output on the ACS6311 module or for the reader's CLOCK line (depending on actual reader Operating Mode selected): [0] - **Not Used**, line ignored; [1] – **Door Contact Input**, the line shorted to the power supply minus indicates that the door is closed; [2] – **Exit Button Input**, each time the line is shorted to the power supply minus the reader grants access; [3] – **Arming Disabled Input**, when the line is shorted to the power supply minus, the reader can not be armed. [4] – **Door Lock Output**, used to activate the door releasing device (an electric lock or an electric strike); [5] – **Reader Disarmed Output**, the line is active when the reader operates in DISARMED Mode; [6] – **Door Alarm Output**, the line is active when the reader has detected any alarm situation, the output is modulated according to the detected alarm type. If more then one alarm has been triggered, the output signals is the one of the highest priority;
C6	0 – 7	Function settings for the REL2 output on the ACS6311 module or for the reader's DATA line - assignments as for C5.
C7	0 – 3 e.g. value=1 door contact input (yellow lead connected to minus = door closed)	Function settings for the reader's IN1 line: [0] – **Not Used** [1] – **Door Contact Input** [2] – **Exit Button Input** [3] – **Arming inhibition**
C8	0 – 3	Function settings for the IN1 line on the ACS6311 module – assignments as for C7.
C9	0 – 3	Function settings for the IN2 line on the ACS6311 module – assignments as for C7.
C10	0 – 1	Internal use
C11	0 – 1	Internal use

NOTE

If the „door feedback contact" and the „door alarm output" are activated and the door is forced open, the card reader will produce an audible alarm signal. In order to deactivate the buzzer on the reader after a door alarm, the door must be closed and opened again using a valid card.

6.4 User Programming Mode

Use **User Programming Mode** to manage users registered in the reader (add and delete cards). To enter this mode let the reader read one time your Master Card. When in User Programming Mode, the LED OPEN is on and the LED STATUS lights red.

There are three types of cards: Normal User, Toggle Limited User, Toggle User.

Once in this mode you have 6 programming commands (command sequences) to choose from. When you begin to enter any of them, the LED SYSTEM starts flashing and it keeps flashing until this command sequence has been correctly completed. If the reader receives no valid input (entries) for more than 20 sec. (between the successive steps of the command sequence), it automatically ends the command sequence. You can exit this mode by presenting 12 times your Master Card, alternatively you may wait approx. 20 sec. for the reader to leave User Programming Mode automatically.

6.4.1 User Programming Commands

NOTE

Any attempt to program an already registered card will be indicated as a programming error.

NOTE

The single digits (0, 1…9) and special characters (* and #) used in this section denote programming steps to be emulated by multiple reading of your valid Programming card. (* = 11 times; # = 12 times)

Mode	Prefix	Description
Add one Normal User with a specified ID and a card	**[3][ID][Card]**	A new user is registered in the terminal's memory at the location corresponding to his specified ID number, he is assigned the proximity card presented in the last step of the command.
Add one Normal User card	**[2][Card]**	A new normal user is registered in the terminal's memory. He is assigned the proximity card presented in the last step of the command.
Add one Toggle User with a specified ID and a card	**[6][ID][Card]**	A new Toggle User is registered in the memory at the location corresponding to the specified ID, he is assigned the proximity card presented in the last step of the command.
Add one Toggle User	**[5][Card]**	A new toggle user is registered in the terminal's memory. He is assigned the proximity card presented in the last step of the command.
Add one Toggle LTD User with a specified ID and a card	**[*][6][ID][Card]**	A new Toggle LTD User is registered in the memory at the location corresponding to the specified ID, he is assigned the proximity card presented in the last step of the command.
Add one Toggle LTD User with a card	**[*][5][Card]**	A new Toggle LTD User is registered in the memory at the location, he is assigned the proximity card presented in the last step of the command.
Delete a user with a specified ID index	**[9][ID]**	The terminal searches memory for a user with the specified ID, once located he is removed from reader, a new user can be programmed to use this ID index.
Exit User Programming Mode	**[#]**	After exiting User Programming Mode the reader returns to the Operation Mode (ARMED or DISARMED Mode) it was in before entering User Programming Mode.

NOTE

Each user ID index consists always of three digits to form ID numbers ranging 000–119 corresponding to the specified ID number memory. In case you assign a new user the ID that has already been taken by some other user you will remove the user (the older one) from the memory.

6.4.2 Programming Examples

Example 1: Add a new Toggle LTD User with a Card
Programming sequence: [*][5][Card][#] or [*][5][Card][Wait approx. 20s]

1. Present your Master Card.
   ➔ The reader enters User Programming Mode, the LED OPEN is on and LED STATUS lights red.
2. Present 11 times your Programming Card to emulate [*].
   ➔ Wait for the acoustic prompt.
3. Present 5 times your Programming Card to emulate [5].
   ➔ Wait for the acoustic prompt.
4. Present a card intended for a new user.
5. Present 12 times your Programming Card to emulate [#]
   ➔ Wait for acoustic prompt
   ➔ Command is completed.

The reader has registered the new user card in its memory and exited the programming function, however, it has not left User Programming Mode so that now you may use your next desired programming command or you may leave this programming mode.

Example 2: Delete a user by using his ID=045 (The ID has 3 digits)
Programming sequence: [9] [0] [4][5][#]

1. Present your Master Card.
   ➔ The reader enters User Programming Mode, the LED OPEN is on and the LED STATUS lights red.
2. Present 9 times your Programming Card to emulate [9]. (delete using ID)
   ➔ Wait for the acoustic prompt.
3. Present 0 times your Programming Card to emulate [0].
   ➔ Wait for the acoustic prompt.
4. Present 4 times your Programming Card to emulate [4].
   ➔ Wait for the acoustic prompt.
5. Present 5 times your Programming Card to emulate [5].
   ➔ Wait for the acoustic prompt.
6. Present 12 times your Programming Card to emulate [#].
   ➔ Wait for the acoustic prompt.
   ➔ Command is completed.
   ➔ The reader deletes the user with ID=045 from its memory, however, it remains in User Programming Mode, so that you may use your next desired programming command or you may leave this programming mode.

7 Appendix

7.1 Dimensions

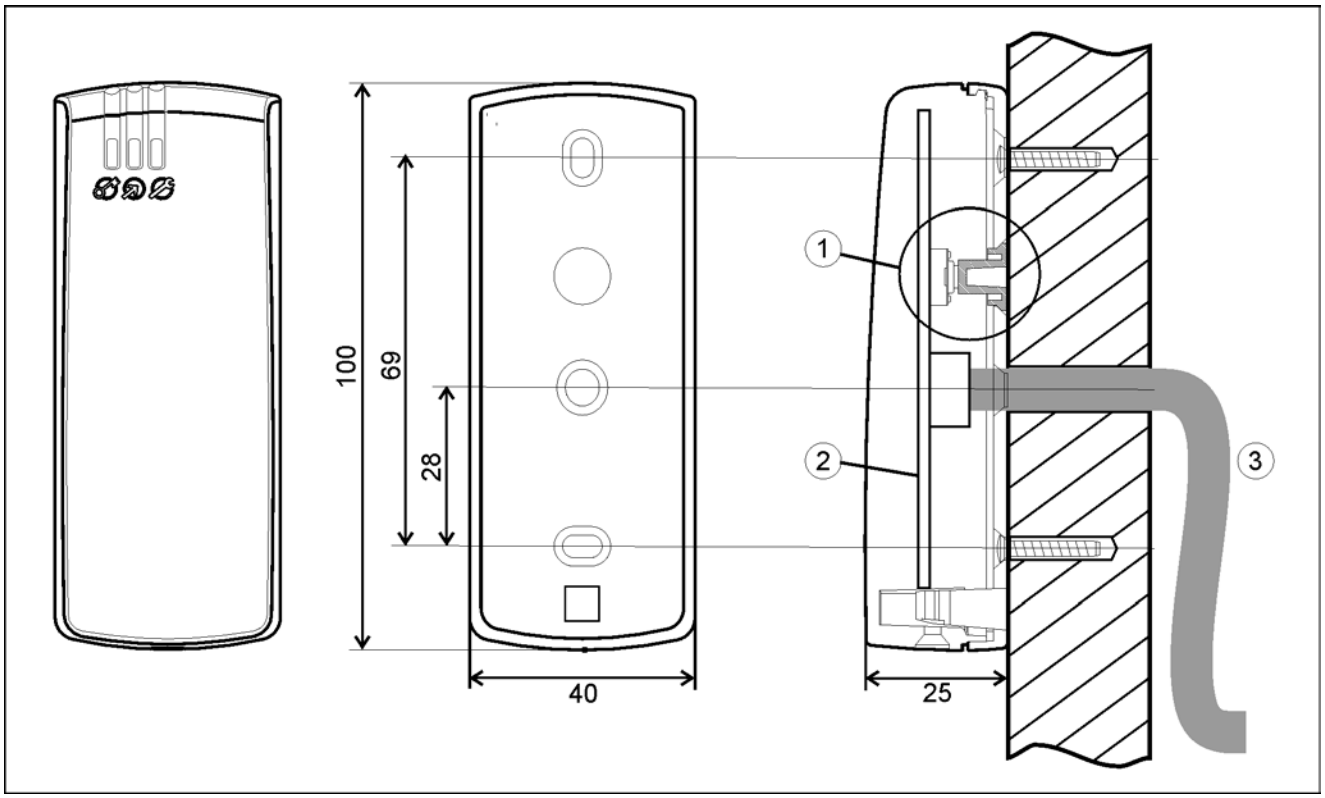


Fig. 5 Dimensions

1 Tamper

2 Electronic circuit board (fully potted)

3 Cable length 400 mm

	LED STATUS (ARMED/DISARMED Mode)
	LED OPEN
	LED SYSTEM

7.2 Various example Connections

7.2.1 Reader in Stand-alone Mode - I/O Board

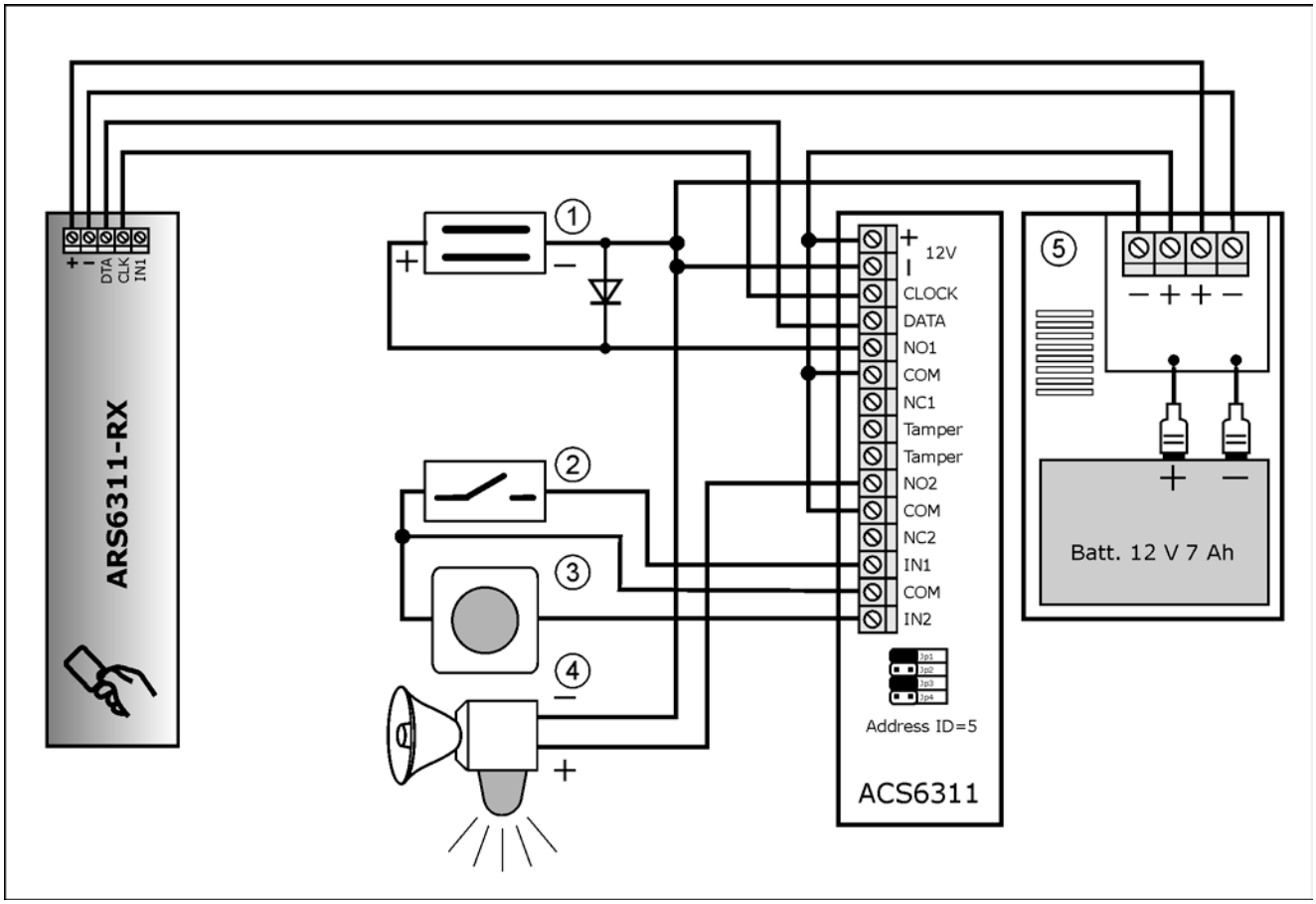


Fig. 6 Stand-alone Mode

1 Door Lock

2 Door Contact (NC type)

3 Exit Button (NO type)

4 Alarm Signaling Device

5 Buffered Power Supply

NOTE
Always set address ID=5 at the ACS6311.

7.3 Maintenance

Defective modules should be sent to the nearest Vanderbilt office to be forwarded to the service centre.

7.4 Disposal

All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.

This crossed-out wheeled bin symbol on the product means the product is covered by the European Directive 2002/96/EC.

The correct disposal and separate collection of your old appliance will help prevent potential negative consequences for the environment and human health.

It is a precondition for reuse and recycling of used electrical and electronic equipment.

For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

7.5 List of Users

Site name:		Reader location:	
ID number	Card number	Type	User name
Master		-	
Installer		-	

List of Users			
Site name:		Reader location:	
ID number	Card number	Type	User name

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