WHAT IS THE Contactless Smart Card Reader?
The Reader is an RFID Contactless Smart Card reader for use with
access control systems.

These installation instructions contain the following information:
- Mounting Instructions
- Connecting the reader to a host using the wiegand interface
- Testing and operation of the reader

How to install the PSAM card?
If the card reader is configured as software encrypted, it is no need
the PSAM card. But if it is hardware encrypted, the PASM card is
necessary. The steps to install the PSAM card are as follow:
1. Open the back cover of the reader first and then you could
find the socket of PSAM card.
2. Push the deck lid on the socket in the direction of sign
"OPEN", and then open it.
3. Insert the flat side of PASM card (NOT THE SIDE WHICH
HAS MISSING CORNER) alone the guide groove on the
upper lid. Let the face which has contacts up (THIS SIDE
WILL FACE DOWN AFTER CLOSE THE LID). After that,
close the upper lid and push it in the opposite direction when
open it, make sure the lid be locked and fastened reliably.
4. Close the back cover of the card reader.

HOW TO MOUNT THE READER
To surface mount the reader, perform the following:
1. Determine an appropriate mounting position for the reader.
   Ideally, for the maximum operating distance, avoid mounting
   the reader directly on metal surfaces.
2. Peel off the back of the self-stick mounting label template
   included with the unit and position it at the desired mounting
   position.
3. Using the template as a guide, drill two holes (hole size is
   indicated on mounting template) for mounting the reader to
   the surface.
4. Drill a 1/2" (13 mm) hole for the cable. If mounting on metal,
   place a grommet or electrical tape around the edge of the hole
   to protect the wire from chaffing.
5. Attach the reader to the mounting surface using the
   appropriate screws (not supplied). The mounting template
   may be left in place if desired since the reader will cover it
   completely.

HOW TO CONNECT THE READER TO THE HOST
The Reader is supplied with an 18-inch-pigtail, having a
7-conductor cable. To connect the reader to the host, perform the
following steps:
1. Prepare both the reader cable and host cables by cutting the
   cable jacket back 1¼ inches and strip the wires ½ inch.
2. Splice the reader pigtail wires to the corresponding host wires
   and cover each connection (see Figure 1).
3. Trim and cover all conductors that are not used.

Figure 1 below shows how you should wire the reader to the host.

Wiring Notes:
1. The individual wires coming out of the reader are color coded
   according to the recommended wiegand standard.
2. When using a separate power supply for the reader, the reader
   power supply and host must have a common ground.
3. The recommended cable depends on the distance from the
   reader to the host. See Table 1 below for the correct wire gage
   based upon distance. Larger wire gauges (smaller numbers)
   are desirable. The wire must be stranded with an overall
4. The cable shield wire on the reader should be attached to an Earth ground (best) or signal ground connection at the panel or power supply end of the cable. This configuration is best for shielding the reader cable from external interference.

### TABLE 1: WIRE GAGE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Distance</th>
<th>Gage</th>
<th>5 Conductor</th>
<th>6 Conductor</th>
</tr>
</thead>
<tbody>
<tr>
<td>= 200 ft.  (61m)</td>
<td>22</td>
<td>Alpha 1295C</td>
<td>Alpha 1296C</td>
</tr>
<tr>
<td>= 300 ft.  (91m)</td>
<td>20</td>
<td>Alpha 58126</td>
<td>Alpha 58126</td>
</tr>
<tr>
<td>= 500 ft.  (153 m)</td>
<td>18</td>
<td>Alpha 58136</td>
<td>Alpha 58136</td>
</tr>
</tbody>
</table>

Recommended cable is only a guideline, use any manufacturer that meets the gage and shield specifications.

### HOW TO TEST AND OPERATE THE READER

The reader should be tested after wiring it to the host. Do this by performing the following steps:

1. Power up the reader. The LED and beeper will activate three times. This indicates that the reader is working properly.
2. Present the configuration card to the reader. Power up the reader. The LED and beeper will activate two times in 1 ~ 10 seconds. This indicates that the reader is configuration successful. (Must configured in 3 seconds after power up)
3. Present a Contactless Smart Card to the reader. The LED will momentarily flash green and beep will activate one time (if the reader is the factory default configuration). This indicates that the card was read properly by reader.
4. After the card data is processed by the host, the host turn the LED green. Refer to the host description of the LED operation if the reader LED is controlled by the host.

### SPECIFICATIONS

**Electrical Characteristics:**
- **Frequency:** 13.56 MHz
- **Power Supply Type:** Linear or switching; ripple ≤ 50 mVpp
- **Operating Voltage Range:** 8.0 – 16 VDC
- **Maximum input current:** 120 mA
- **Maximum Cable Distance to Host:** 500 ft. (150 meters)

**Output Interface:** Wiegand 32 (User-defined Support)

**Tamper Output:** NC

**Card Supported:** ISO14443 CPU Card

**Card Read Distance (Normal Use):** More than 3cm

**Operating Temperature Range:** -25° F to 145° F (-31°C to 63°C)

**Operating Humidity:** 0 to 95% (non-condensing)

**Dimensions:** 3.5” (89mm) L x 3.5” (89mm) W x 0.8” (20mm) D

**FCC STATEMENT:**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and
2) This device must accept any interference received, including interference that may cause undesired operation.

**Warning:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.