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# **UC-2000**

# **Installation**

# **Manual**

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**Unicorn Computers Technology Limited**

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## Specifications

### Power Requirements:

- The UC-2000 Controller requires an 11.4Vac - 12.6Vac 700mA minimum power supply.

### Sealed Lead Battery Requirements:

- The UC-2000 Controller requires a 12Vdc 4 - 7 AH Sealed Lead Battery to provide up to 8 - 24 hours of full operational backup (depending on the load and the battery).

### Memory Backup:

- An internal rechargeable gold capacitor can retain the controller memory for up to 5 days upon loss of both primary and backup battery power.

### Output Power:

- Unregulated 12Vdc (10 to 16 volts) 200mA maximum for 12Vdc Card Readers.
- Regulated 5Vdc (4.75 to 5.25 volts) 100mA maximum for 5Vdc Card Readers.

### Fuses:

- 2 amp, 20 x 5mm, fast blow.

### Input Points:

- 5 non-supervised input points (named I1, I2, I3, I4 and I12) are provided.
- I1 and I2 are for Magnetic Contacts (Door Status Sensors) of Door 1 and Door 2 respectively.
- I3 and I4 are for Exit Buttons of Door 1 and Door 2 respectively.
- I12 is wired to the enclosure tamper.

### Output Points:

- 2 DPDT relay outputs (named O1 and O2) rated at 24Vdc 1A are provided for door lock control of Door 1 and Door 2 respectively.

### Reader Interfaces:

- 2 Wiegand Card Reader Interfaces are provided for the Card Readers of Door 1 and Door 2.

### Operating Temperature:

- 35°F to 110°F (2°C to 43°C).

### Operating Relative Humidity:

- 0 to 90% non-condensing.

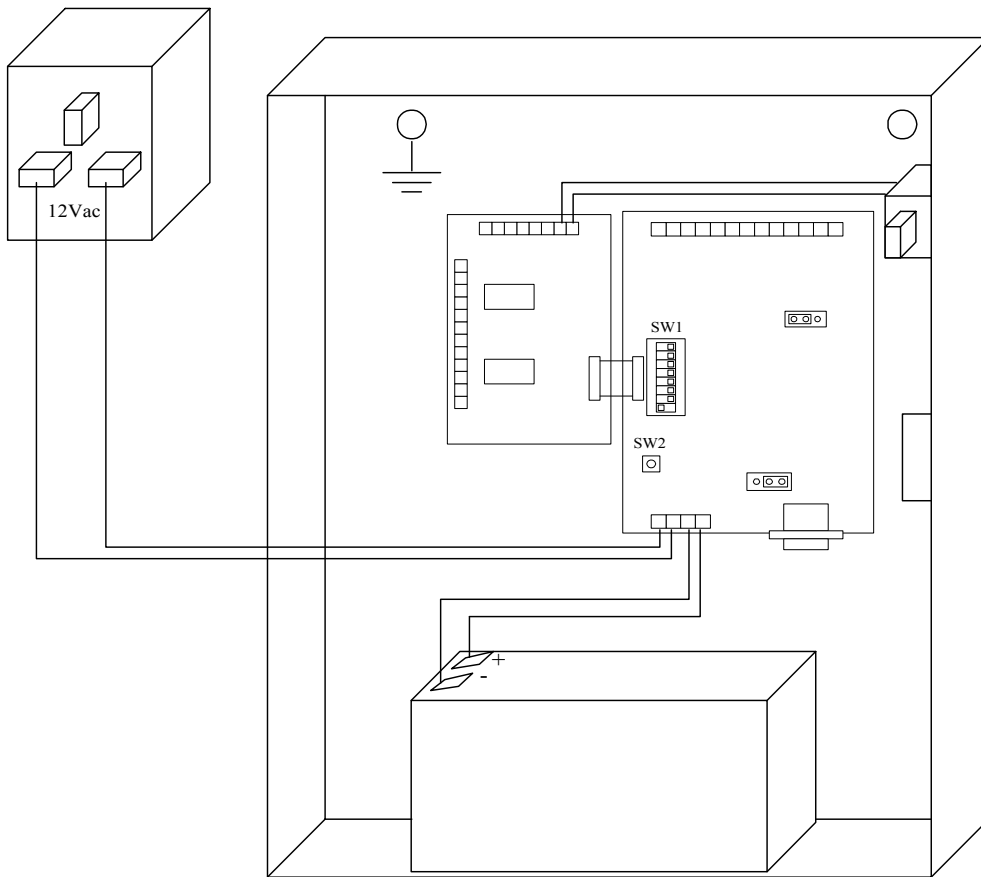
### Dimensions:

- 33cm x 28cm x 7.6cm ( H x W x D) with lock and key. Enclosure tamper switch is provided.

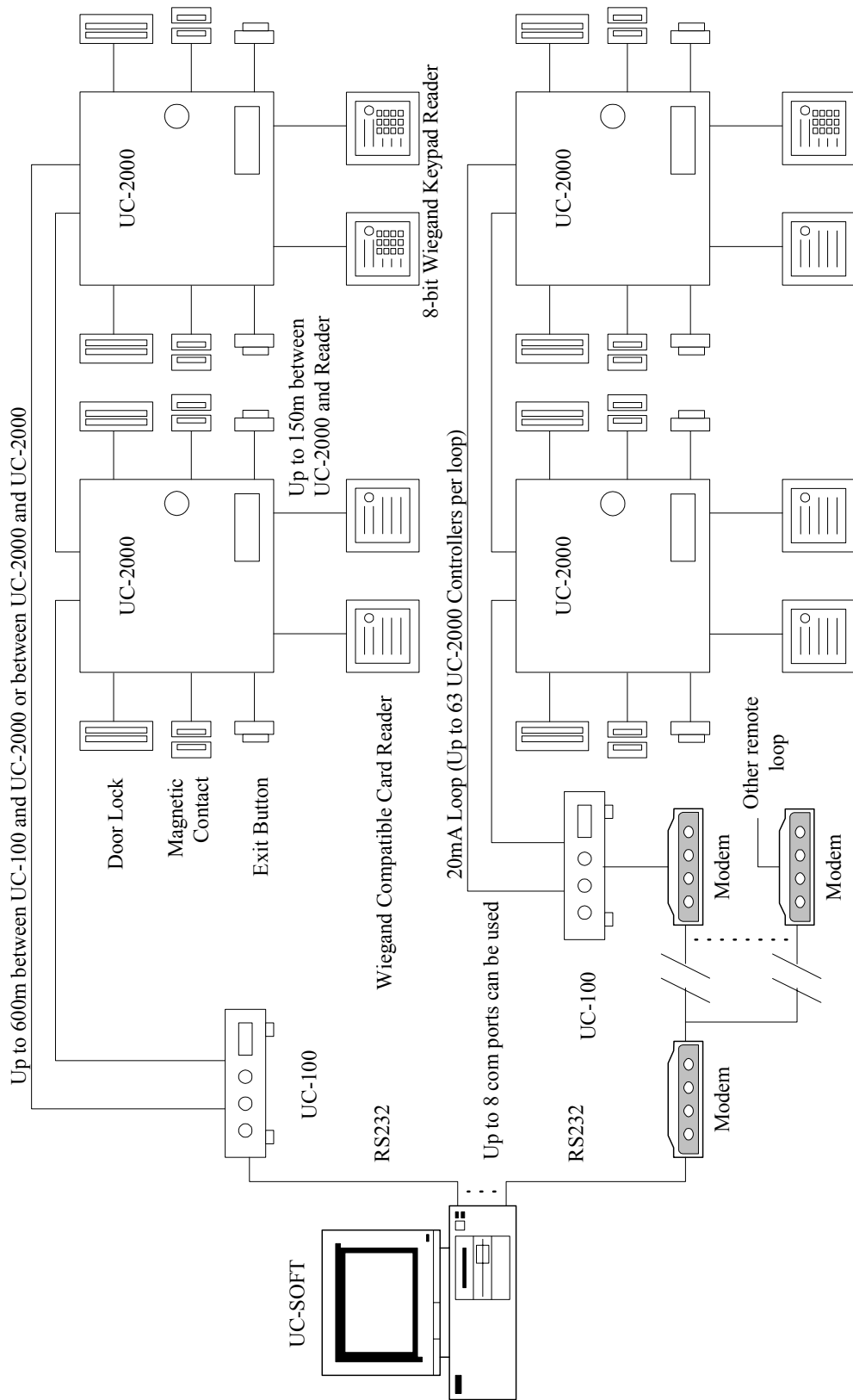
### Weight:

- 6 pounds (2.7 kg) (Sealed Lead Battery is not included.).

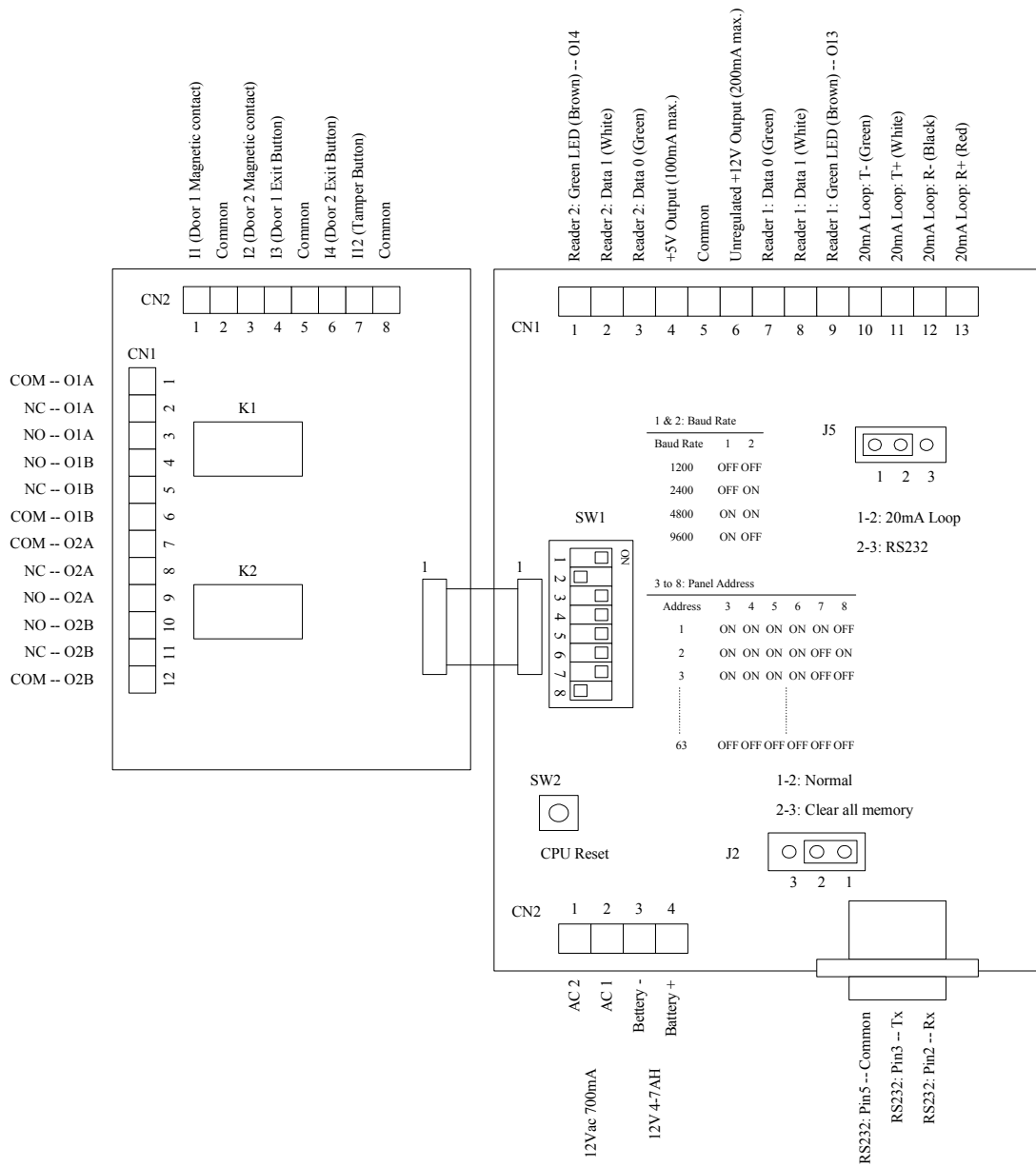
**Enclosure for the UC-2000 Controller**



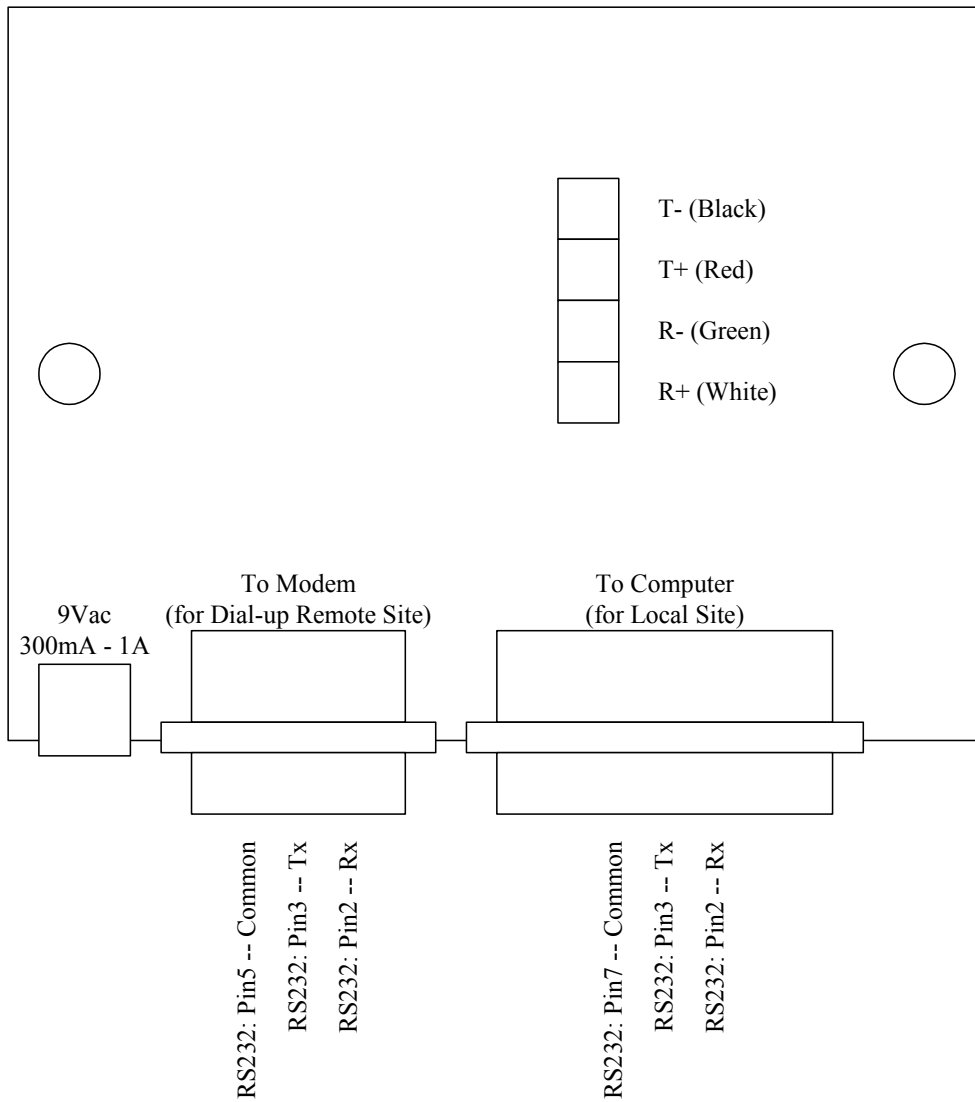
**Unicorn Access Control System Configuration**



**UC-2000 Controller Layout**

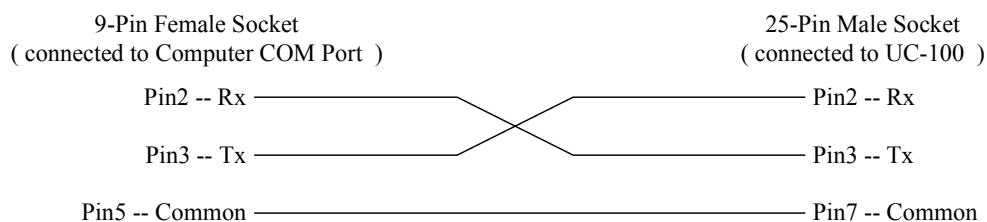


**UC-100 Layout**

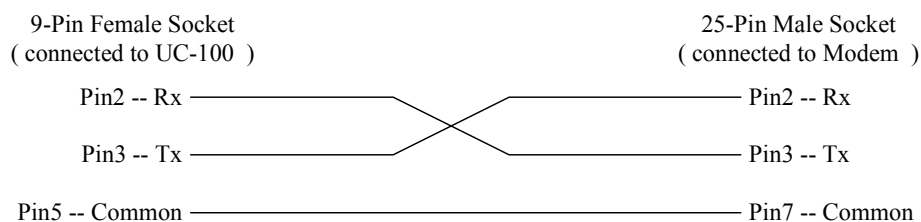


### Cable Connection for UC-100 to Computer and to Modem

#### *A. Local Site ( Computer to UC-100 )*

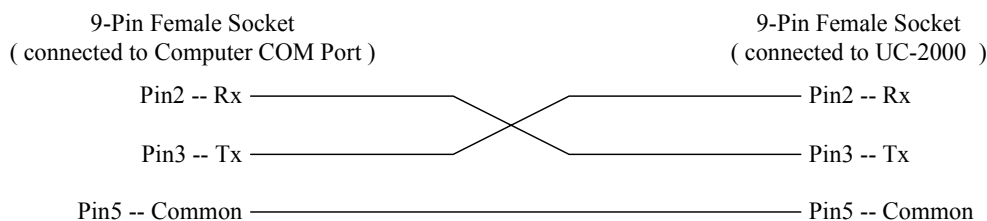


#### *B. Dial-up Remote Site ( UC-100 to Modem )*

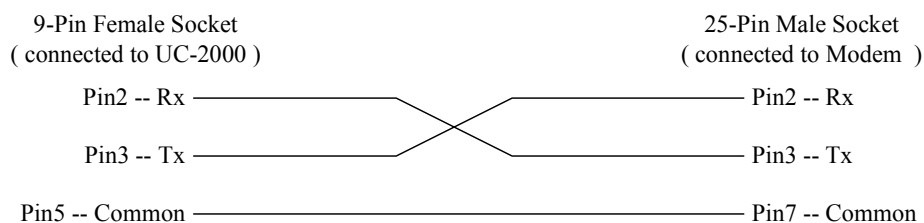


### Direct Cable Connection for UC-2000 to Computer and to Modem without UC-100

#### *C. Local Site ( Computer to UC-2000 ) -- for Single Panel and Distance less than 50 feet only*



#### *D. Dial-up Remote Site ( UC-2000 to Modem ) -- for Single Panel and Distance less than 50 feet only*



#### **Cable Requirements:**

- 3 conductors
- 18-22 AWG

#### **Max. Distance:**

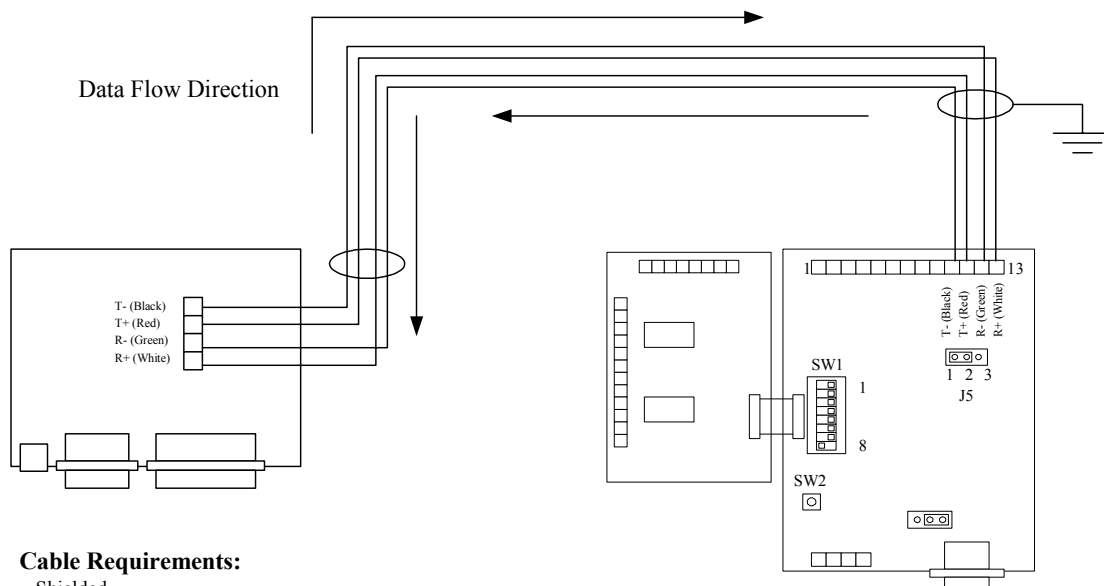
- 50 feet between UC-100 and Computer or between UC-100 and Modem
- 50 feet between UC-2000 and Computer or between UC-2000 and Modem without UC-100

#### **Tips: Check SW1 and J2 of each Panel**

1. Default baud Rate is 4800bps for Local Site (Pin 1 & 2 of SW1 is at ON ON position); change to 9600bps for dial-up Remote Site (Pin 1 & 2 of SW1 is at ON OFF position respectively).
2. Push Reset Button SW2 after changed the baud Rate or the Address.
3. The J5 of Panels must be at 1-2 position for 20mA Loop Communication with UC-100 or at 2-3 position for Direct Cable Connection without UC-100.



### 20mA Loop Communication Wiring for Single Panel



#### **Cable Requirements:**

- Shielded
- Twisted pair
- 4 conductors (2 twisted pairs), one pair for transmission and the other for reception
- 18-22 AWG

#### **Max. Distance:**

- 2000 feet between UC-100 and UC-2000

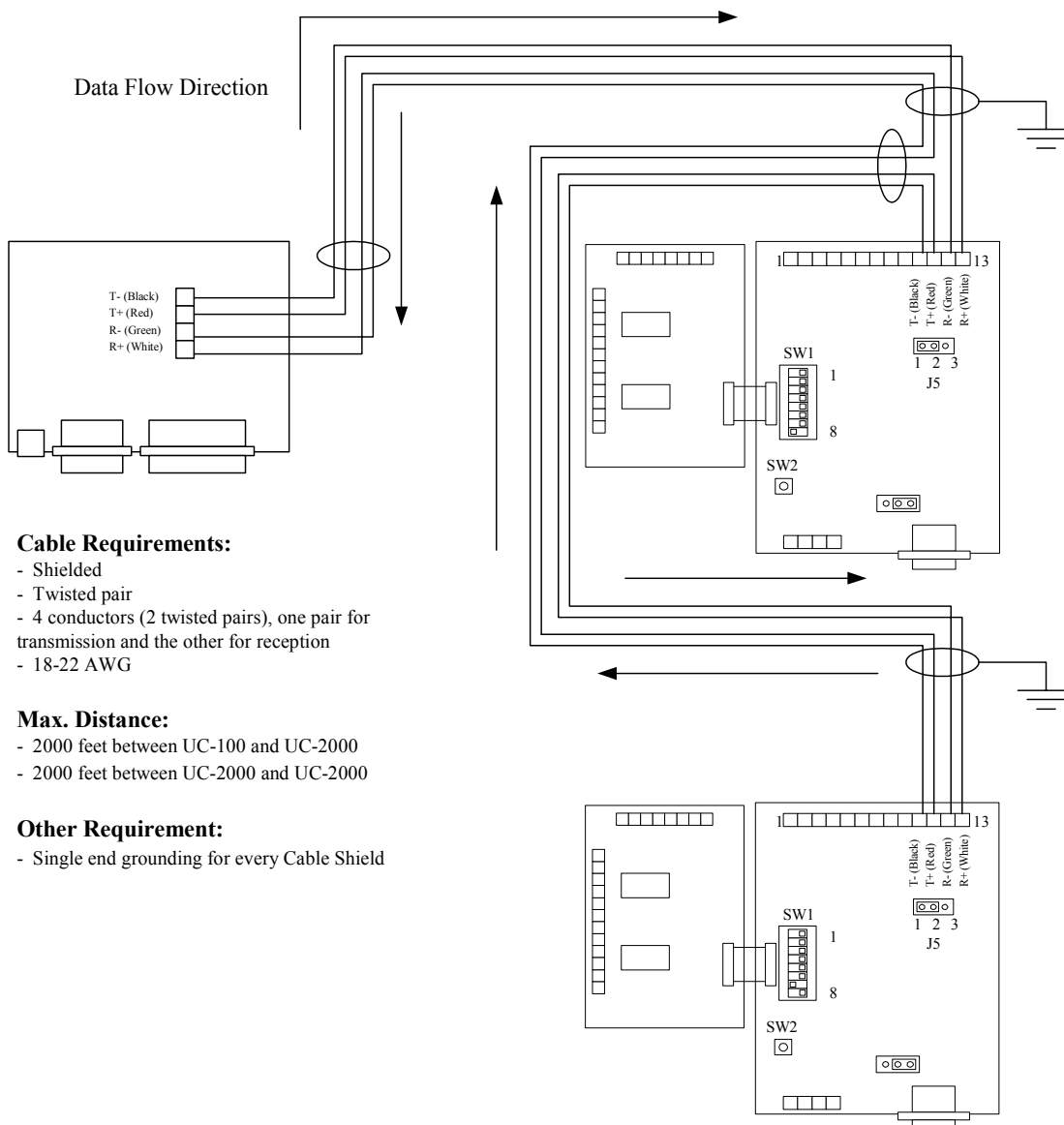
#### **Other Requirement:**

- Single end grounding for every Cable Shield

#### **Tips: Check SW1 and J2 of each Panel**

1. Default baud Rate is 4800bps for Local Site (Pin 1 & 2 of SW1 is at ON ON position); change to 9600bps for dial-up Remote Site (Pin 1 & 2 of SW1 is at ON OFF position respectively).
2. Push Reset Button SW2 after changed the baud Rate or the Address.
3. The J5 of Panels must be at 1-2 position for 20mA Loop Communication.

**20mA Loop Communication Wiring for more than one Panel**



**Cable Requirements:**

- Shielded
- Twisted pair
- 4 conductors (2 twisted pairs), one pair for transmission and the other for reception
- 18-22 AWG

**Max. Distance:**

- 2000 feet between UC-100 and UC-2000
- 2000 feet between UC-2000 and UC-2000

**Other Requirement:**

- Single end grounding for every Cable Shield

**Tips: Check SW1 and J2 of each Panel**

1. The baud Rate of Panels in the same loop must be the same (default is 4800bps for Local Site, Pin 1 & 2 of SW1 is at ON ON position; change to 9600bps for dial-up Remote Site, Pin 1 & 2 of SW1 is at ON OFF position respectively).
2. The Address of Panels (Pin 3 to 8 of SW1) in the same loop must be different (from 1 to 63).
3. Push Reset Button SW2 after changed the baud Rate or the Address.
4. The J5 of Panels must be at 1-2 position for 20mA Loop Communication.

### Card Reader Wiring

**Cable Requirements:**

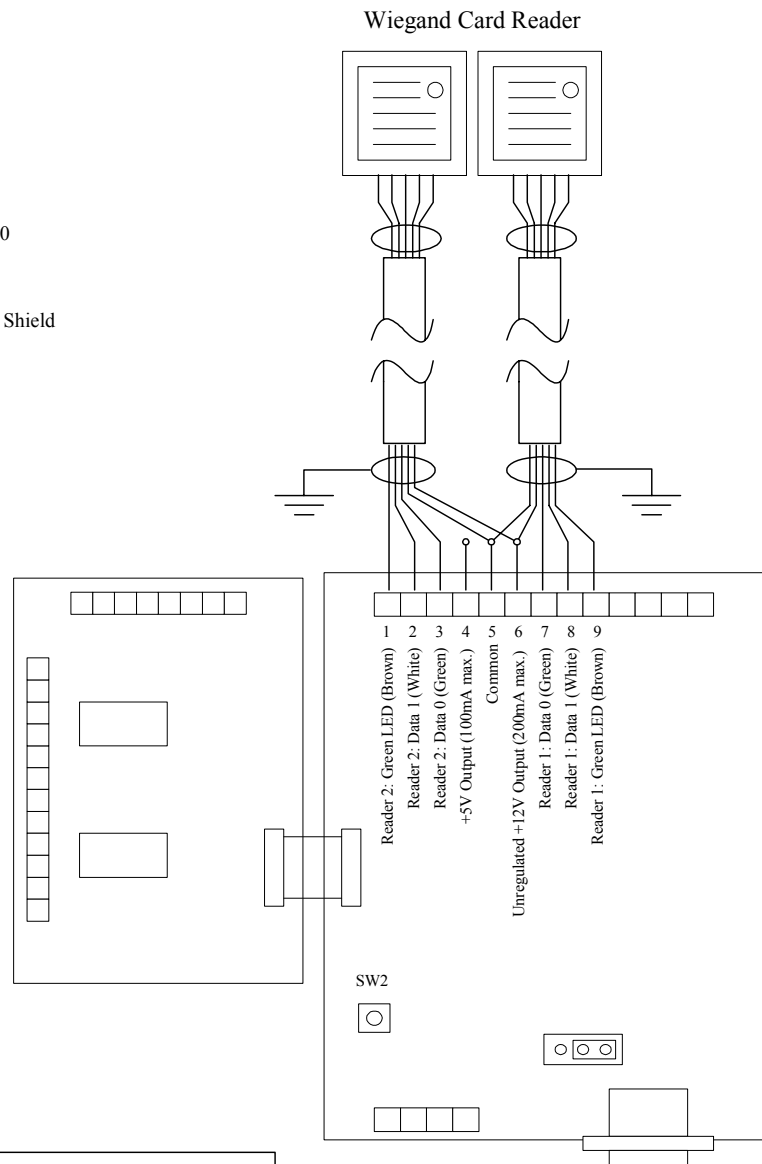
- Shielded
- 5 or 6 conductors
- 18-22 AWG

**Max. Distance:**

- 500 feet between Reader and UC-2000

**Other Requirement:**

- Single end grounding for every Cable Shield



- Tips:**
1. Check the required input voltage of the Card Reader if it is +5V or +12V before connecting to UC-2000 Panel.
  2. At least 8 - 16 inches distance between Card Readers to prevent the interference between each other.
  3. The UC-2000 Panel supports 26, 32, 34 or 36-bit Wiegand Card Format.
  4. The UC-2000 Panel supports 8-bit Wiegand Keypad Format plus 26, 32, 34 or 36-bit Wiegand Card Format for the Keypad-Card Reader to provide "Pin and Card" function .

**Door 1 Wiring (One Panel for Two Doors)**

**Cable Requirements:**

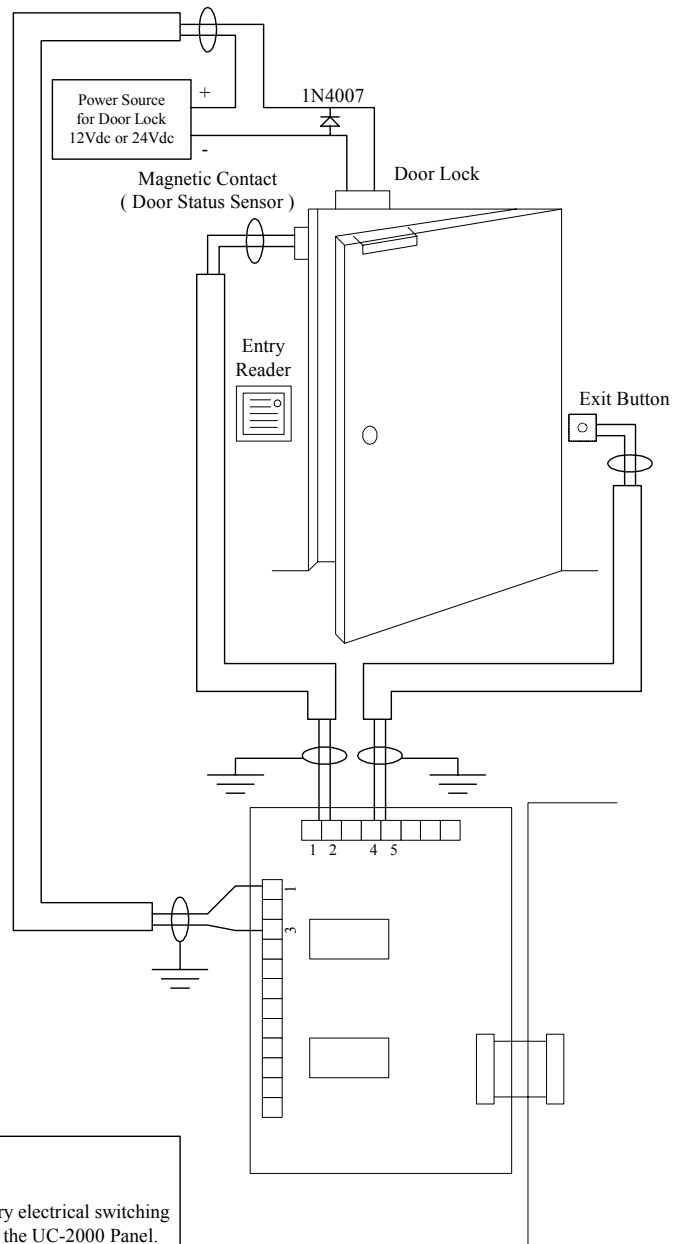
- Shielded
- Twisted pair
- 2 conductors
- 18-22 AWG

**Max. Distance:**

- 500 feet between Door Lock and UC-2000
- 500 feet between Exit Button and UC-2000
- 500 feet between Magnetic Contact and UC-2000

**Other Requirement:**

- Single end grounding for every Cable Shield



**Tips:**

1. A diode 1N4007 **MUST** be installed across every electrical switching device (Door Lock) run through a relay contact on the UC-2000 Panel. The diode protects the UC-2000 Panel from the power generated by the collapsing magnetic field of the electrical load device.
2. **DON'T** power door locks with the 12V output of the UC-2000 Panel or with the same power supply used for the UC-2000 Panel.

**Door 2 Wiring (One Panel for Two Doors)**

**Cable Requirements:**

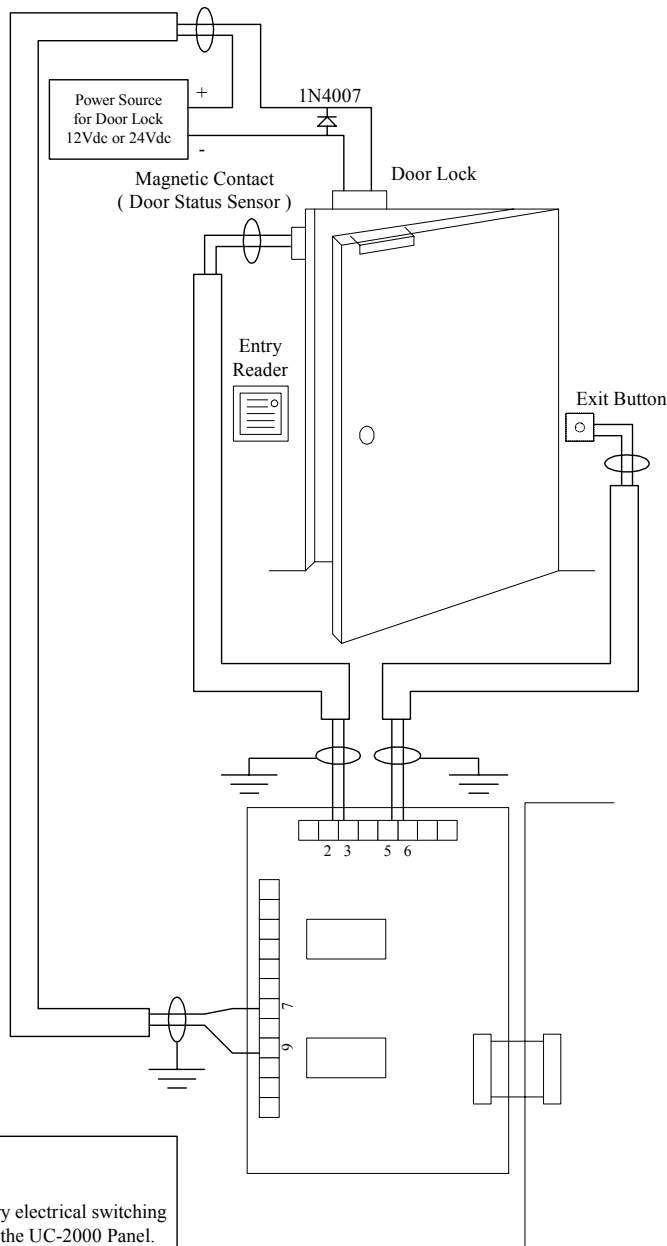
- Shielded
- Twisted pair
- 2 conductors
- 18-22 AWG

**Max. Distance:**

- 500 feet between Door Lock and UC-2000
- 500 feet between Exit Button and UC-2000
- 500 feet between Magnetic Contact and UC-2000

**Other Requirement:**

- Single end grounding for every Cable Shield



**Tips:**

1. A diode 1N4007 **MUST** be installed across every electrical switching device (Door Lock) run through a relay contact on the UC-2000 Panel. The diode protects the UC-2000 Panel from the power generated by the collapsing magnetic field of the electrical load device.
2. **DON'T** power door locks with the 12V output of the UC-2000 Panel or with the same power supply used for the UC-2000 Panel.

**IN / OUT Reader for Single Door Wiring (One Panel for One Door)**

**Cable Requirements:**

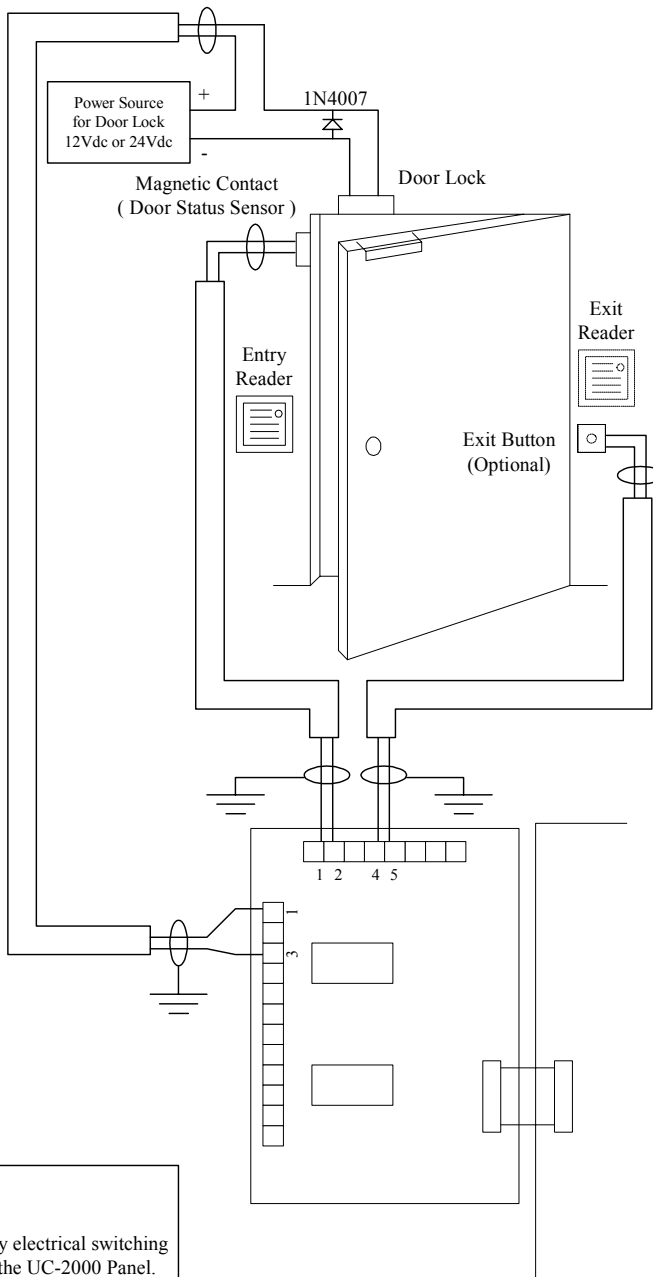
- Shielded
- Twisted pair
- 2 conductors
- 18-22 AWG

**Max. Distance:**

- 500 feet between Door Lock and UC-2000
- 500 feet between Exit Button and UC-2000
- 500 feet between Magnetic Contact and UC-2000

**Other Requirement:**

- Single end grounding for every Cable Shield



**Tips:**

1. A diode 1N4007 **MUST** be installed across every electrical switching device (Door Lock) run through a relay contact on the UC-2000 Panel. The diode protects the UC-2000 Panel from the power generated by the collapsing magnetic field of the electrical load device.
2. **DON'T** power door locks with the 12V output of the UC-2000 Panel or with the same power supply used for the UC-2000 Panel.

## Important Notice

1. A diode 1N4007 **MUST** be installed across every electrical switching device (Door Lock) run through a relay contact on the UC-2000 Panel (Fig. 1). The diode protects the UC-2000 Panel from the power generated by the collapsing magnetic field of the electrical load device.
2. Use a separate **12Vac** power supply (**DON'T use 12Vdc** power supply) or transformer to power the UC-2000 panel.
3. **DON'T** power door Locks with the 12V output of the UC-2000 Panel or with the same power supply used for the UC-2000 Panel.

