ACI Door Access Controller
Hardware Manual

Condensed Instructions
April 2014

Access Control
Innovation Limited

Data Collection Systems

ACI116 / ACI116N Access Control Master Terminal - User Guide April, 2005.

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1. Introduction

The Master Control unit is used to interconnect up to 16 Door Slave terminals and to connect to a PC for purposes of door supervision, door status, data collection/transfer and reconfiguration services. Up to 31 such Master Control units may be connected to a single computer serial port. When connecting to Ethernet using TCP/IP methodology, the number of Master Control Unit is unlimited, since each Master Control unit carries a specific IP address inside the network.

These instructions cover the ACI1xx Master Control Unit and Door Slave Terminals.

2. The hardware

Multi-door Master Controller
Multi-door Master Controller can connect with up to 16 doors slave controller and 32 readers for its IN/OUT operation.

Technical Specification

Memory:
- Sufficient for 10000 cards / 17200 transactions

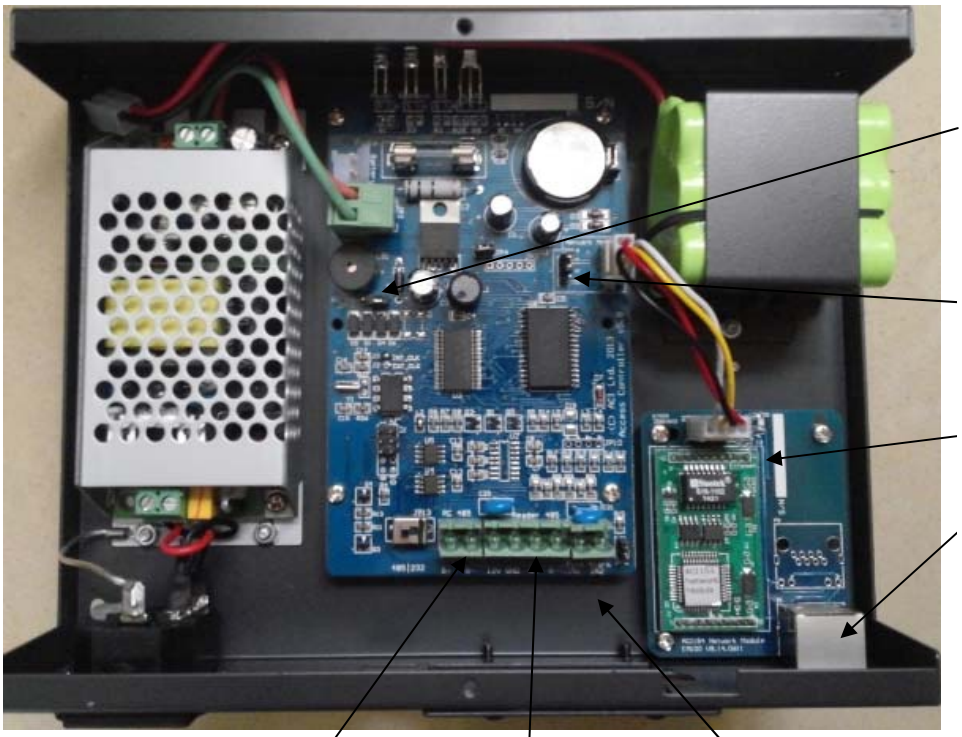
Interfacing:
- Communication done over RS232 or 485 or modem to the computer
- TCP/IP connection (optional module ACI154)

Man-Machine Interface:
- 4 LED indicator
- Buzzer ON when using battery

Power Supply:
- 110 - 260Vac at 50/60 Hz or 13VDC
- Internal battery stand for 12 hours
- Power consumption: 200 mA Max

Mechanical Features:
- Dimensions: 150 × 205 × 48 cm
- Weight: 1500 g
- Operation temperature: -5 to +60℃

Multi-door Master Controller with TCP/IP module



Remarks :

1. For IP address setting, please refer to document ACI 154 Network Module Setting.doc
2. Fire alarm input, when this connector change to NO (not shorted), Master Controller will send command to all door slave controller to open the relay until it is closed.

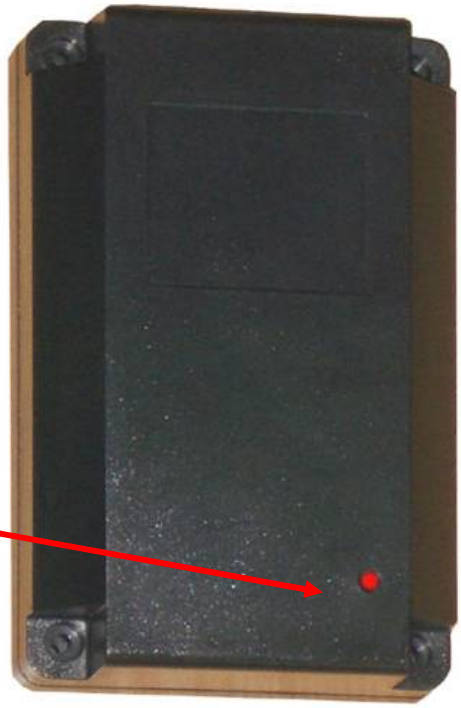
External Door Slave Controller (Model ACI152)

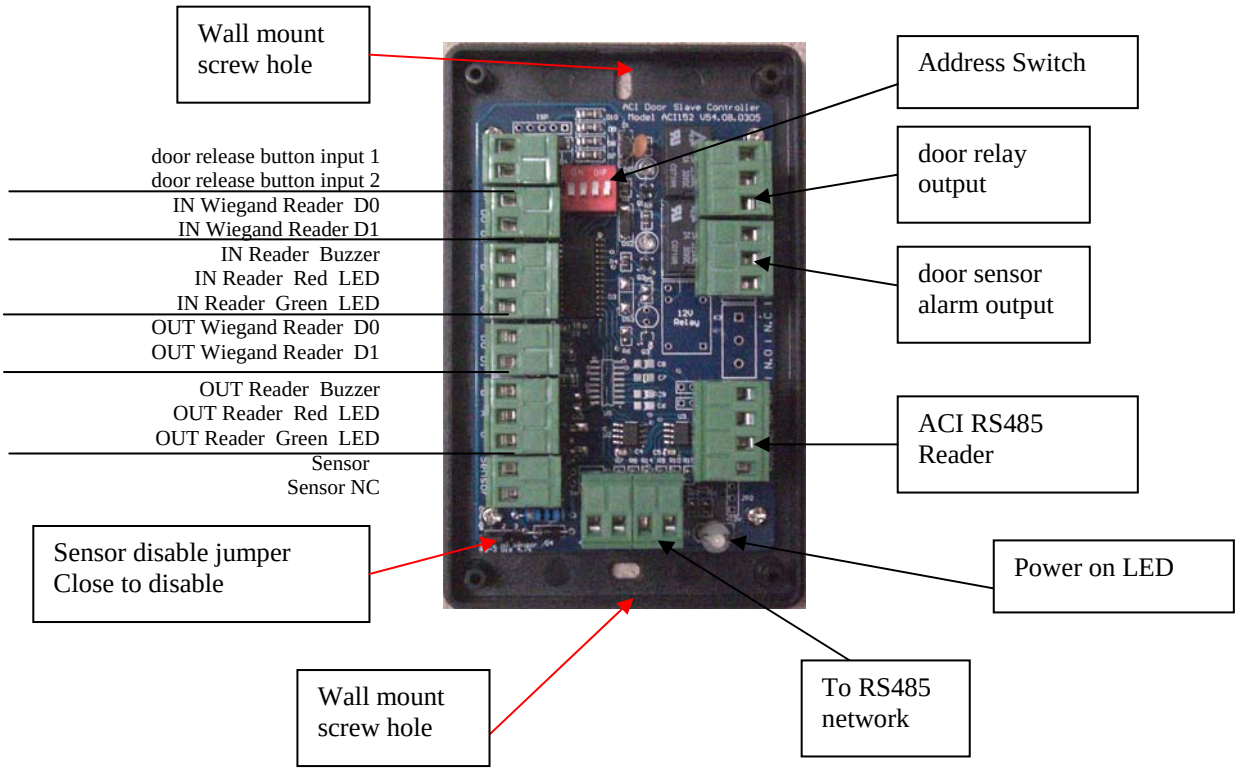
Door Slave Controller can be used with Master Control Unit, it is used to connect IO (inputs/outputs) for each doors, those IO signals will be then transfer to/from Master control unit.

Model ACI152 – one door controller with 1 release button / 1 door relay output / 1 door sensor input / 1 sensor alarm output

Model ACI155 – 2 doors controller with 2 release buttons input / 2 door relay output

When the LED changes to green means the RS485 connection with Master Controller was established.

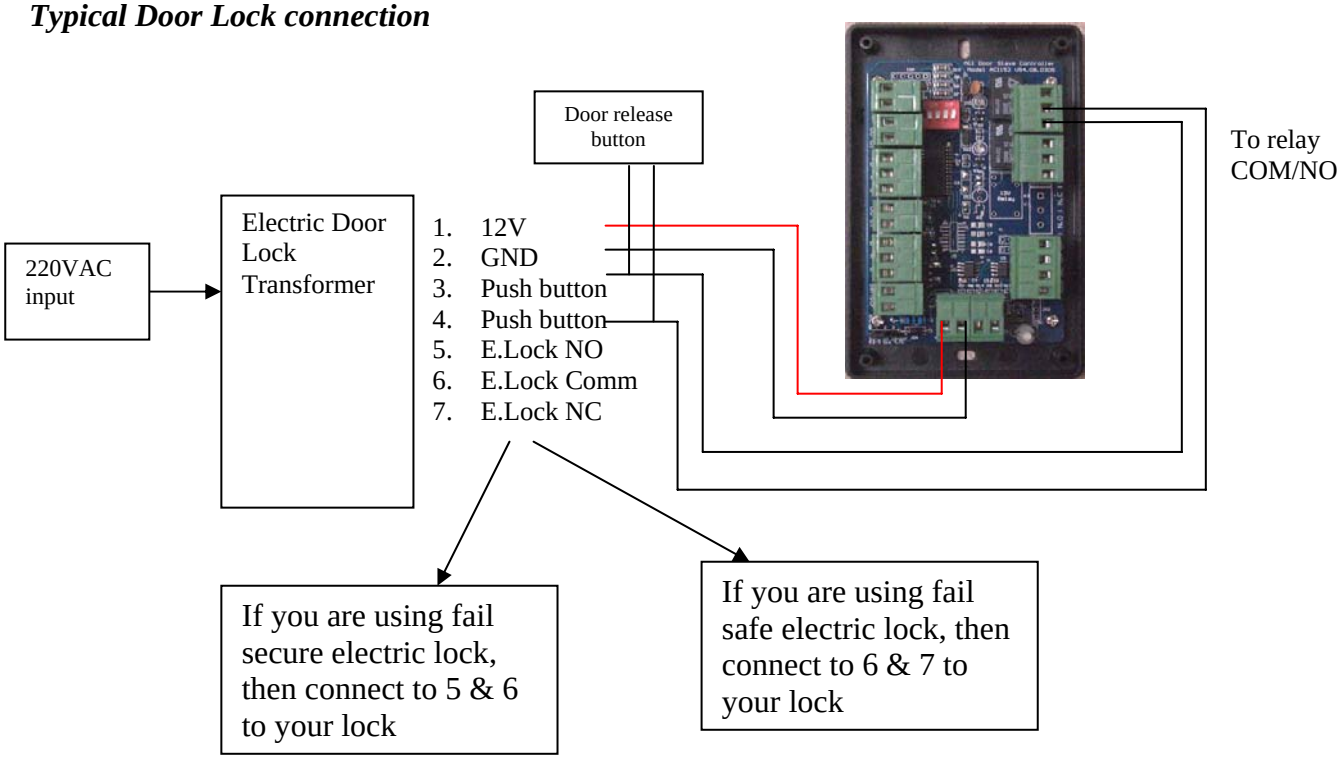




Each ACI152 Door Slave controller can connect the following:

1. door release button input
2. door relay output
3. door sensor input
4. door sensor alarm output

Typical Door Lock connection



Remark :

1. For Door Release button, you can connect to point 3 & 4. If you want to save the record then you may connect to door controller release button input, however you will have to take the risk of too many transactions. The release button will still working even the communication link between door slave controller and master controller is broken. When this happen, the door open time will set to 5 seconds.
2. Fail Secure electric lock means give power to OPEN the lock
3. Fail Safe electric lock means give power to LOCK the lock
4. ***Do not use one output power supply for door controller, reader together with electronic lock unless the power supply has 2 separate 12VDC output..***

Fire alarm input connection

Fire alarm input NC
(Normal Close)
If use it remove jumper
next to this connector

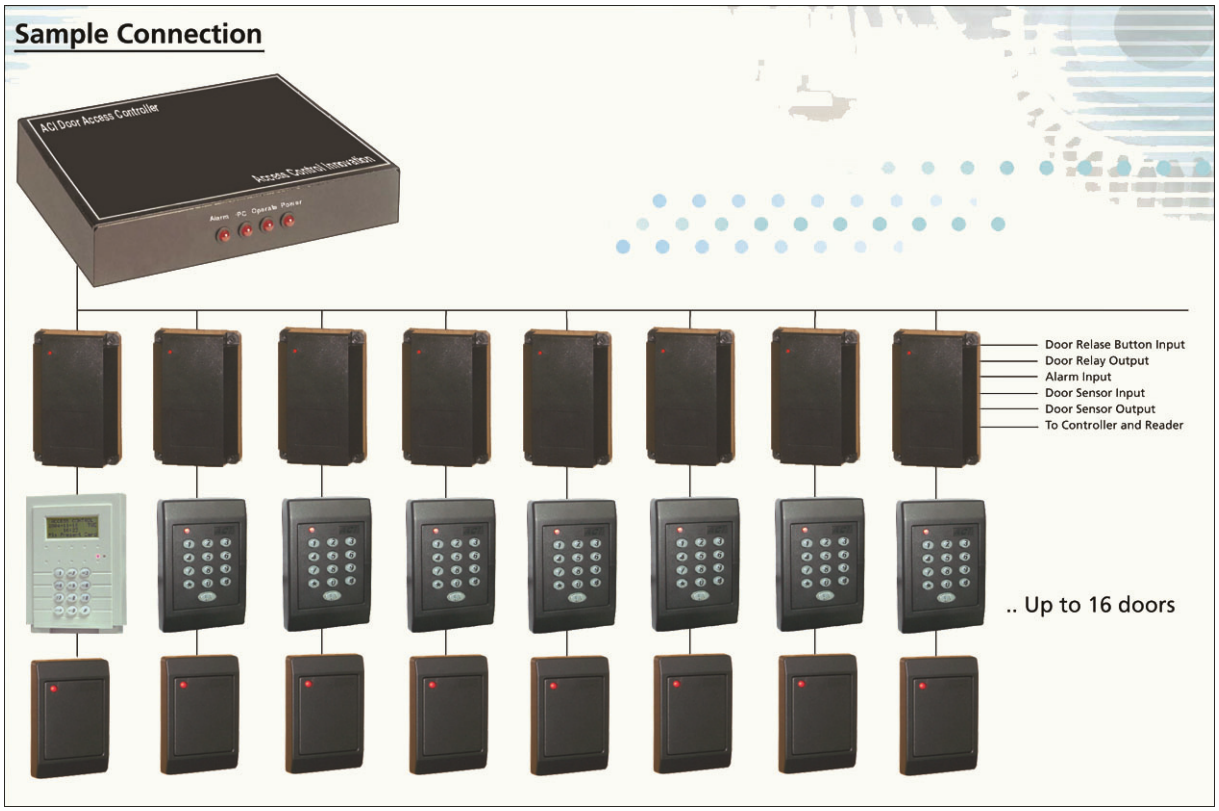
Fire alarm input, when this connector input was changed its status to OPEN (not shorted), Master Controller will send command to all its door slave controllers to open the relay until it is closed.

3. Hardware Setup

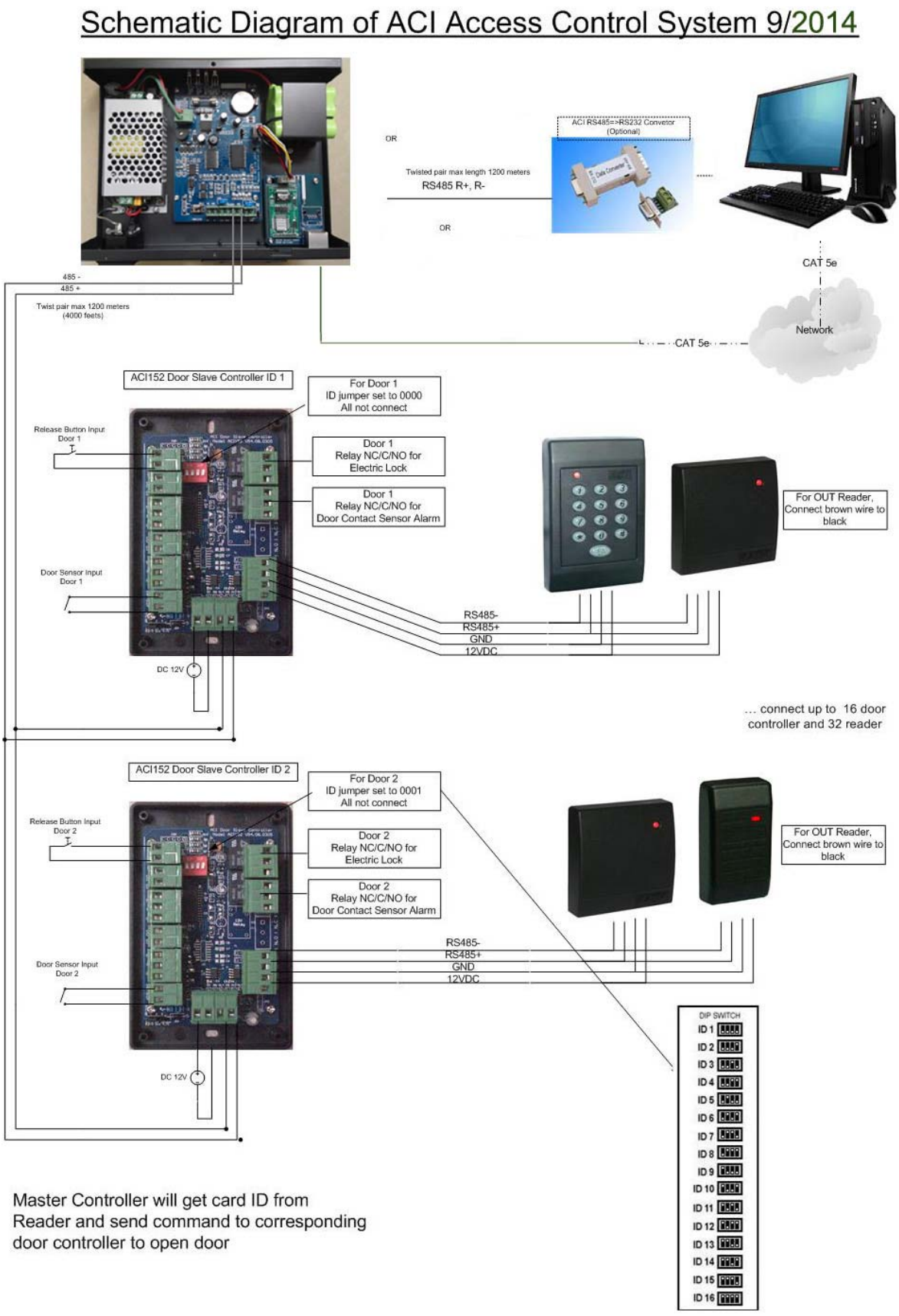
Multi-door Master Controller System

First you need at least one Multi-door Master Controller, one Door Slave Controller and one ACI RS485 reader.

Below is an example of the connection diagram. Each door can maximum equipped with 3 devices, such as Door Slave Controller, IN reader and OUT reader. IN reader may equipped with key pad for PIN entry.



Detail wiring diagram



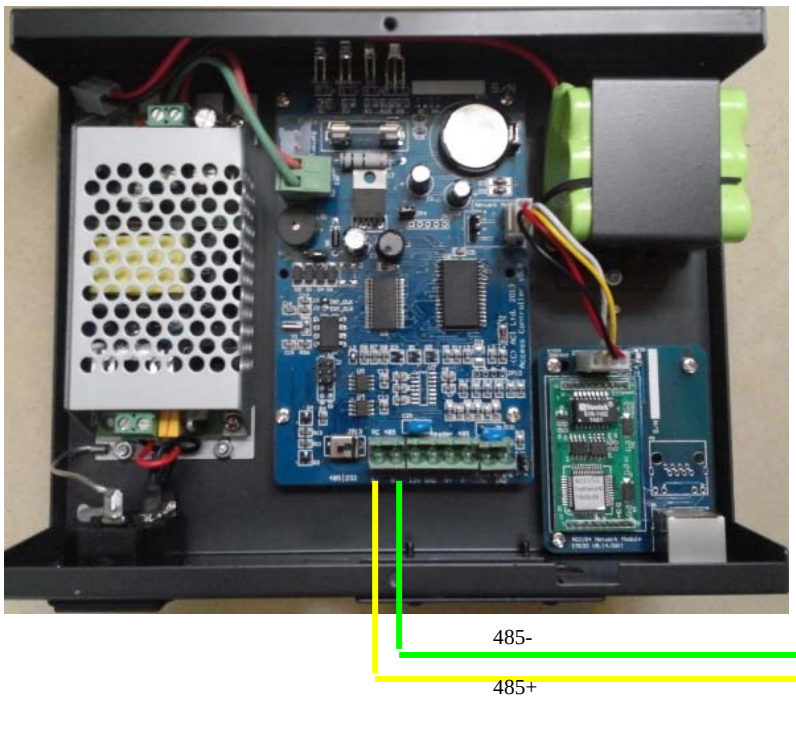
4. Connecting to computer

Normally we can connect The Master Controller via RS485 or Network.
Change JP14 to “1-2” for network
Change JP14 to “2-3” for RS485

By Network

By RS485

If you are going to use RS485 connection, then you need a RS485 data converter

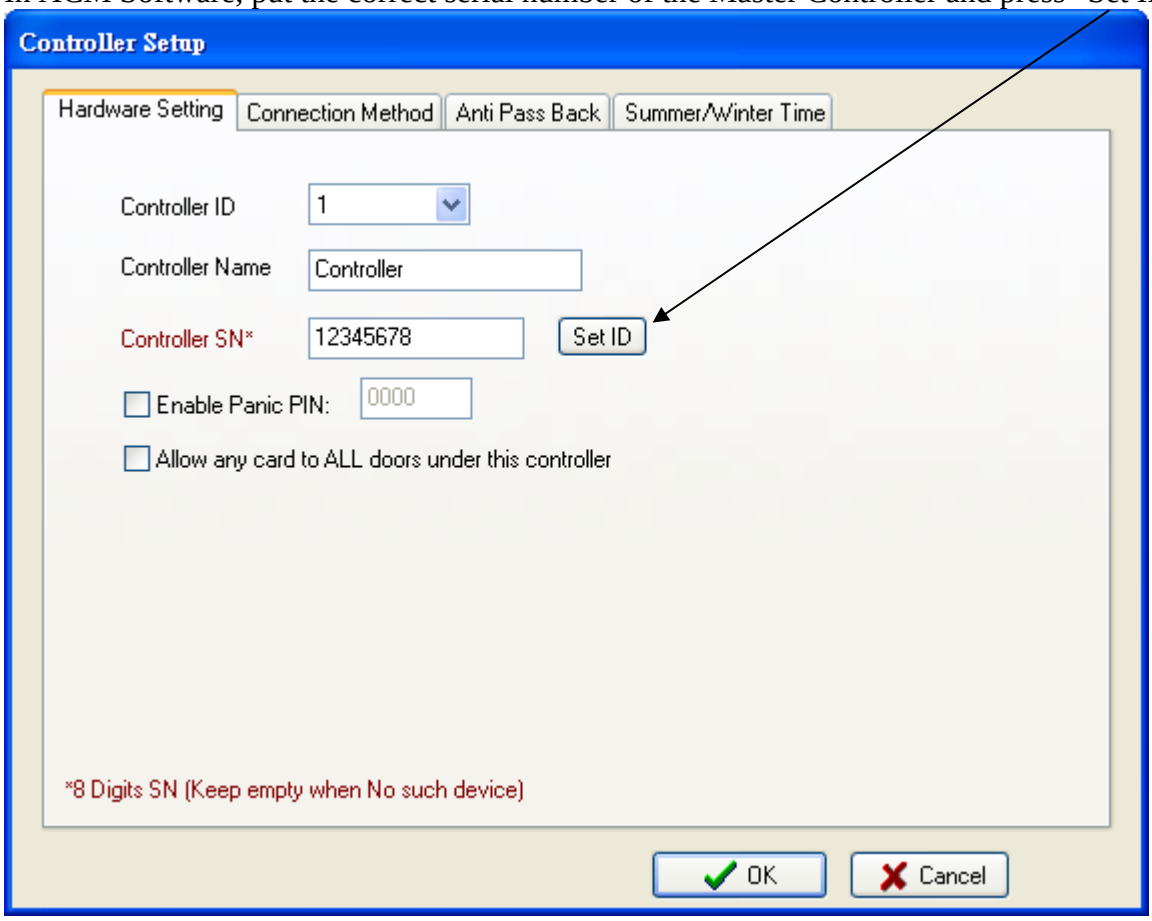


5. Setting Master Controller / Door Slave Controller and Reader address

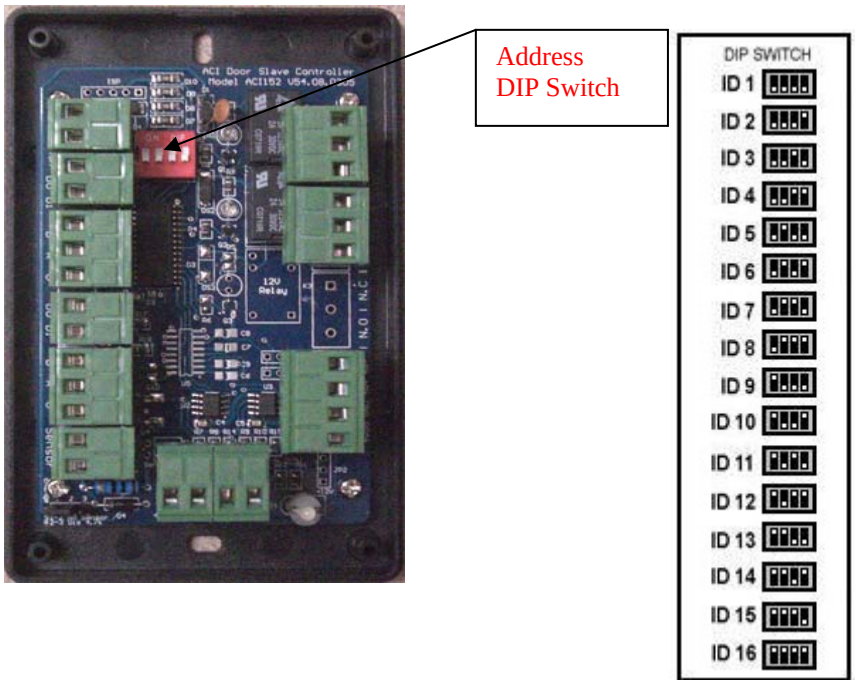
Each Master Controller, door slave controller and reader has its id address. ACM software provides a utility for you to set the device ID

Setting Master Controller Address

In ACM Software, put the correct serial number of the Master Controller and press “Set ID”



Setting Door Slave Controller Address



Setting Reader Address
The reader is connecting to ACI152 (Reader Port)

When Brown wire is not connected to GND (black wire), it will be IN reader for that door
When Brown wire is connected to GND (black wire), it will be OUT reader for that door

6. Smart Card Reader

All ACI RS485 reader are with same cable color as below:
1. Red : 12DC
2. Black : GND
3. Yellow : RS485+
4. Green : RS485 –

ACI303S Small Size Proximity Reader

Technical Specifications
- Card Format : EM4001 or compatible
- Frequency : 125KHz
- Output : RS485 format
- Power : 9 – 15VDC
- Static Current: 50mA, Operating Current: 60mA.
- Operating temperature: -10℃ ~ +70℃.
- Dimensions: 180 x 44 x 17 mm
- Weight: 200g

ACI303 Proximity Reader

Technical Specifications
- Card Format : EM4001 or compatible
- Frequency : 125KHz
- Output : RS485 format
- Power : 9 – 15VDC
- Static Current: 50mA, Operating Current: 60mA.
- Operating temperature: -10℃ ~ +70℃.
- Dimensions: 115 x 76 x 16mm
- Weight: 200g

ACI303X Proximity Reader

Technical Specifications
- Card Format : EM4001 or compatible
- Frequency : 125KHz
- Output : RS485 format
- Power : 9 – 15VDC
- Static Current: 50mA, Operating Current: 60mA.
- Operating temperature: -10℃ ~ +70℃.
- Dimensions: 85 x 85 x 20mm
- Weight: 200g

ACI323 Proximity Keypad Reader

Technical Specifications

- Card Format : EM4001 or compatible
- Frequency : 125KHz
- Output : RS485 format
- With numeric keypad for password entry, work with ACI Door Access Controller
- Bell key for external bell connection
- Power : 9 – 15VDC
- Static Current: 50mA, Operating Current: 60mA.
- Operating temperature: -10℃ ~ +70℃.
- Dimensions: 123 x 87 x 20mm
- Weight: 300g

ACI333 Proximity Keypad Reader

Technical Specifications

- Card Format : EM4001 or compatible
- First Line display company name
- Power supply : 12 VDC, 200mA
- LED : Red & Green
- Buzzer control
- Operating temperature: -10℃ ~ +70℃.
- Dimensions: 162 x 114 x 35 mm
- Weight : 300g
- Cover Color : Beige Color

ACI203 Mifare Reader

Technical Specifications

- Card Format : Mifare 1 or compatible
- Frequency : 13.56MHz
- Output : RS485 format
- Power : 9 – 15VDC
- Static Current: 50mA, Operating Current: 60mA.
- Operating temperature: -10℃ ~ +70℃.
- Dimensions: 115 x 76 x 16mm
- Weight: 200g

ACI203X Proximity Reader

Technical Specifications

- Card Format : Mifare 1 or compatible
- Frequency : 13.56MHz
- Output : RS485 format
- Power : 9 – 15VDC
- Static Current: 50mA, Operating Current: 60mA.
- Operating temperature: -10℃ ~ +70℃.
- Dimensions: 85 x 85 x 20mm
- Weight: 200g

ACI223 Mifare Keypad Reader

Technical Specifications

- Card Format : Mifare 1 or compatible
- Frequency : 13.56MHz
- Output : RS485 format
- With numeric keypad for password entry, work with ACI Door Access
- Power : 9 – 15VDC
- Static Current: 50mA, Operating Current: 60mA.
- Operating temperature: -10℃ ~ +70℃.
- Dimensions: 123 x 87 x 20mm
- Weight: 300g

ACI233 Mifare Keypad Reader

Technical Specifications

- Card Format : Mifare 1 or compatible
- First Line display company name
- Frequency : 13.56MHz
- Power supply : 12 VDC, 200mA
- LED : Red & Green
- Buzzer control
- Operating temperature: -10℃ ~ +70℃.
- Dimensions: 162 x 114 x 35 mm
- Weight : 300g
- Cover Color : Beige Color