

Quick Start Guide

Introduction

The SDC-220 is a two door controller with Ethernet connectivity.

It has two relay outputs, four digital inputs, and dedicated fire and tamper (J4) inputs. Supports up to four RS-485 readers or Wiegand converters. The unit has two Wiegand interfaces on-board. It is able to control up to 2 normal doors or one Bi-Directional turnstile or mantrap/booth.

Each controller can manage up to 1000 tag holders and store as much as 100 000 access events in offline mode.

The unit comes with a 15Vdc 5A power supply, a battery backup of 7Ah and is mounted in a plastic enclosure with a lockable door.

Please make sure that all devices powered from the controller use less than 2A in total.

NOTE: Make sure the power is disconnected while performing wiring connections to prevent short circuits or power spikes.

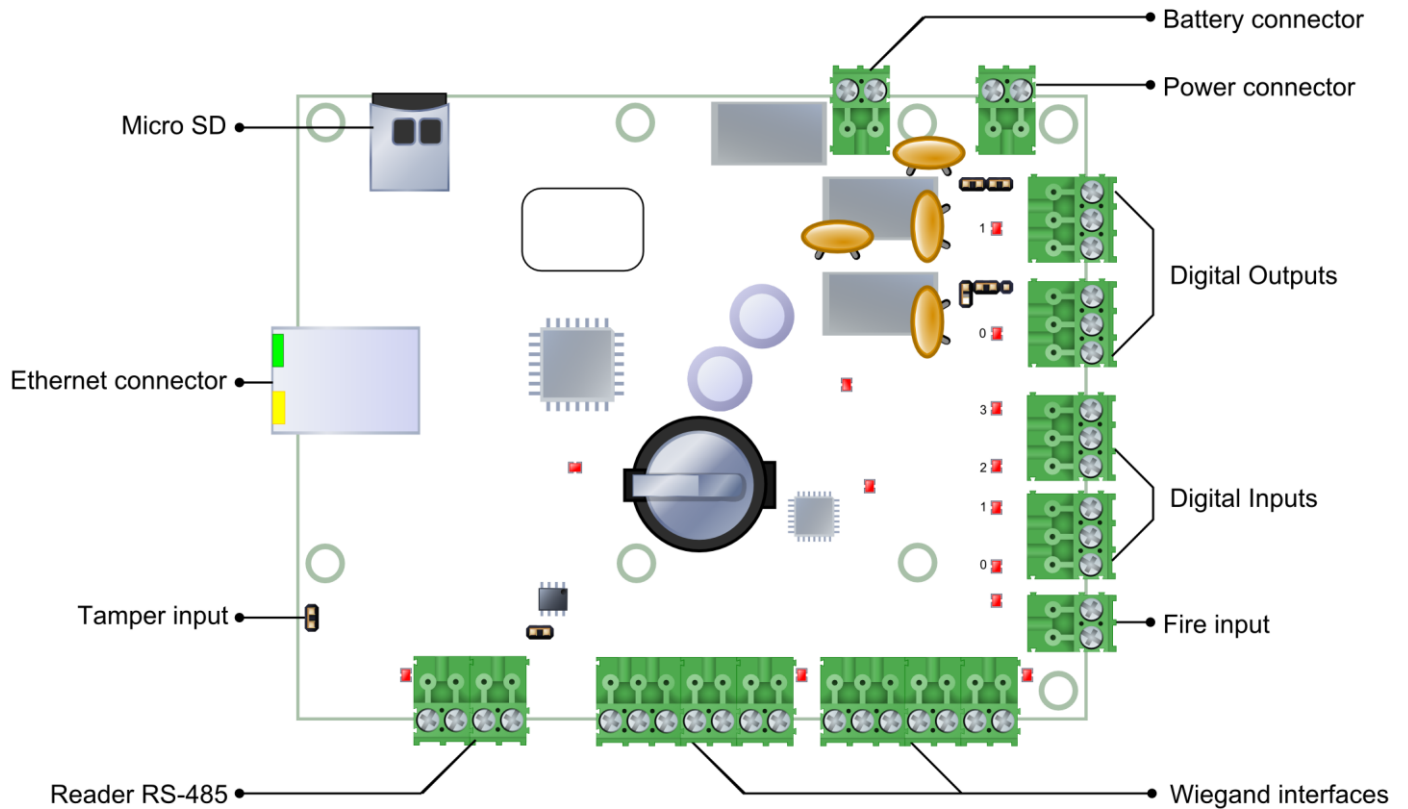


Figure 1
SDC-220 Controller board – labeled

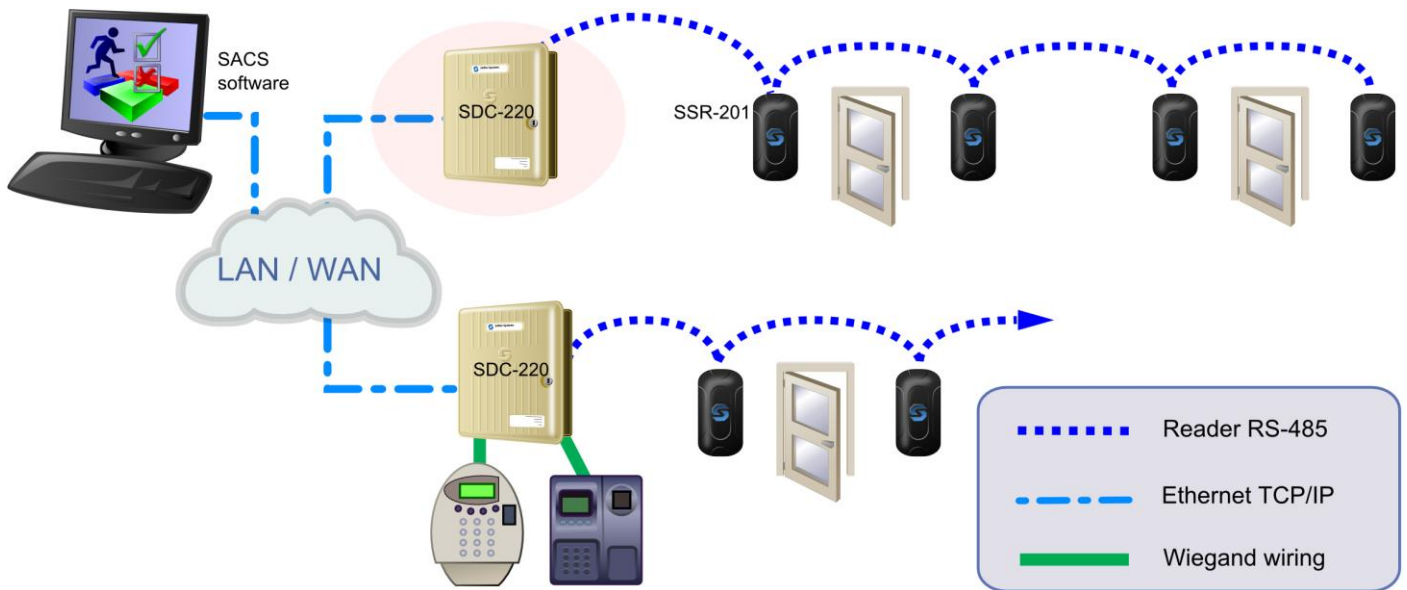


Figure 2

Location for the SDC-220 in an access control system

NB: As the controller is not individually addressable on a network it must use address "0" in the S.A.C.S software.

Step 1: Connecting the RS-485 device network

All readers (SSR-201) or Wiegand converters are connected to each other via an RS-485 multi-drop network which is connected to the controller as detailed in the figure below.

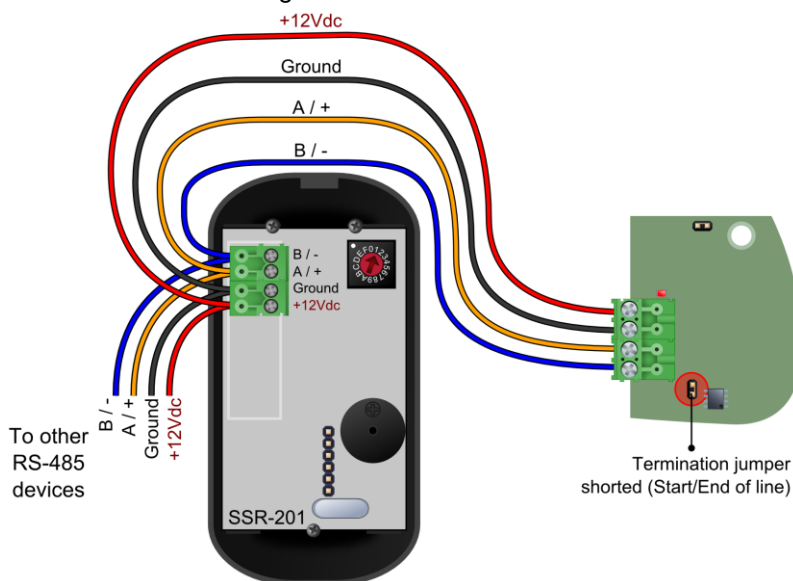


Figure 3

Wiring configuration for the RS-485 reader network

NOTE: The power supplied by the controller is dependant on the length of the cable and the number of devices being supplied. Should the cable length be too long the voltage drop might cause the power to be insufficient.

Step 2: Connect the Wiegand devices

The Wiegand devices communicate with the SDC-220 via five signalling lines.

These lines can be broken into three groups:

- The data lines (Data 0, Data 1)
- The control lines (Red LED, Green LED and Buzzer)
- The power lines (+12Vdc and Ground)

NOTE: Make sure that the power is switched off before connecting these cables.

Connect the data and control lines ensuring that the correct connections are used.

Connect the power lines to the Wiegand device if the device is to be powered from the controller.

NOTE: If an external power supply is used for the Wiegand device, then the Ground line **MUST** be connected between the Wiegand device and the controller.

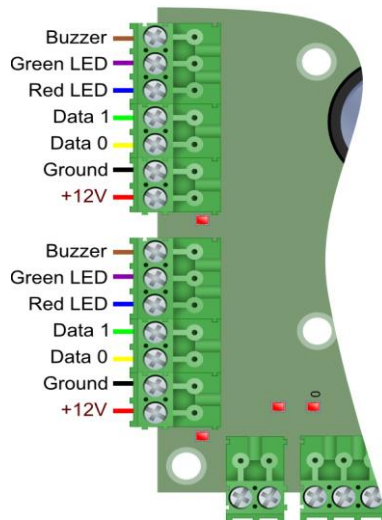


Figure 4

Wiring configuration for the Wiegand interfaces

The second Wiegand interface can also be wired up in the same way.

NOTE: Even though the SDC-220 supports up to 4 RS-485 readers, remote address 0 is shared between the on board Wiegand connections and the RS-485 reader network. This means that if you have a RS-485 reader on address 0 and a Wiegand reader attached on-board they will both use the same address and will essentially look like the same device to the controller. It is a good idea to start the addressing of readers or other devices from 1 to prevent this from being a problem.

Step 3: Connecting the power supply

The controller comes with a 15Vdc power supply which gets connected to the top of the board. It will also charge the backup battery from the power supply when power is available.

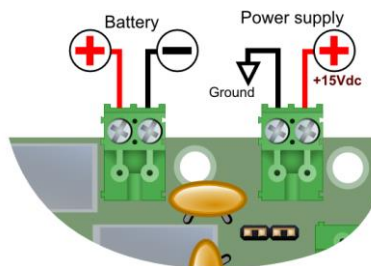


Figure 5

Connections to power supply and battery

When the power is connected the Power LED will turn on.

When you are satisfied that the controller is correctly linked to the power, switch it off again until you have completed wiring your digital inputs and outputs to prevent accidental short circuits or power spikes.

Step 4: Connecting the digital inputs

Before wiring the digital inputs make sure that the power is switched off at the controller board.

When looking at the controller board with the power connector on the top right of the board, the inputs are arranged in descending order from top to bottom on the right hand side of the board (under the outputs) with a shared common between each input pair. See the diagram below on how to correctly wire them.

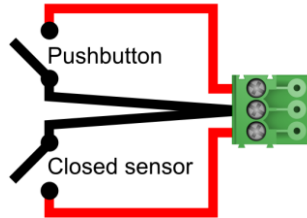


Figure 6

Example wiring of inputs 0 and 1 to a pushbutton and closed sensor

Step 5: Connecting the digital outputs

Before wiring the digital outputs ensure that the power is switched off at the controller board.

When looking at the controller board with the power connector on the top right of the board, the outputs are arranged in descending order from top to bottom on the right hand side of the board (above the inputs).

The outputs can provide +12Vdc power, or simply act as a potential free contact, allowing external DC or AC power to be switched through the relay.

The configuration of this output mode can be accomplished using the jumpers J7 and J8. Possible output modes are listed below.

Output mode 1: Externally powered outputs (Default)

To set the output to externally powered mode, place a single jumper in the center of the jumper pin strip as displayed in the diagram below.



Figure 7

Jumper setting for J7 and J8 – externally powered outputs – relay switched

When in this mode, the relay provides a 'dry contact' when the output is activated. This allows for devices like AC switched locks to be supplied by an external power source. Care must be taken not to exceed the contact ratings listed in the section entitled 'Product Specifications'.

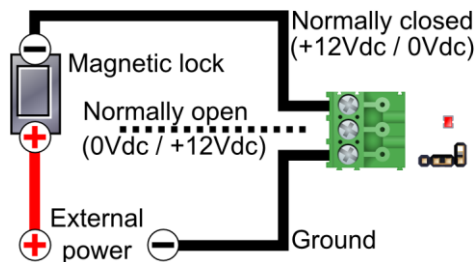


Figure 8

Example wiring for an externally powered magnetic lock – Normally closed

Output mode 2: Internally powered outputs

To set the output to internally powered mode, place two jumpers on both sides of the jumper pin strip as displayed in the diagram below.



Figure 9

Jumper setting for J7 and J8 – internally powered outputs

When in this mode, 12Vdc power will be switched through the controller board from the power supply connected to the controller. It will have battery backup (If the standard power supply is used) so that minor power interruptions will not disrupt the output power.

Make sure that sufficient power is available from the power supply for all internally switched outputs, for the controller and for any devices powered from the power supply.

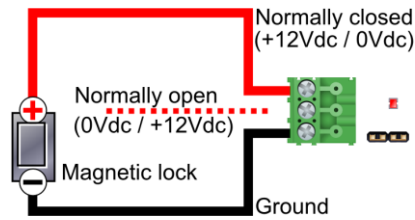


Figure 10

Example wiring for an internally powered magnetic lock – normally closed.

Step 6: Configuring the TCP/IP

For SACS Communication Manager to communicate to the controller, its IP address must be configured to an address within the same network range as the SACS Server.

The default IP Address is 192.168.8.52.

NOTE: The following IP ports are used by controller: TCP/IP Ports 10000 and UPD Port 12345 (For debug only). Ensure that these ports can be accessed on the network and is not restricted in any way. (E.g. firewalls restricting or blocking these ports)

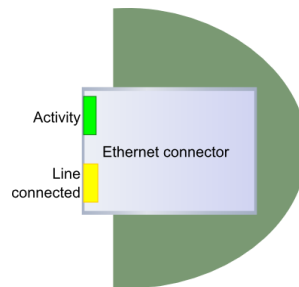


Figure 11

The Ethernet connector on the controller

Step 7: HW Configuration

Start the HW Configuration by selecting the Tools tab in the S.A.C.S Software application on the SACS Server PC. Please note that the HW Configuration is only available on the S.A.C.S Server.

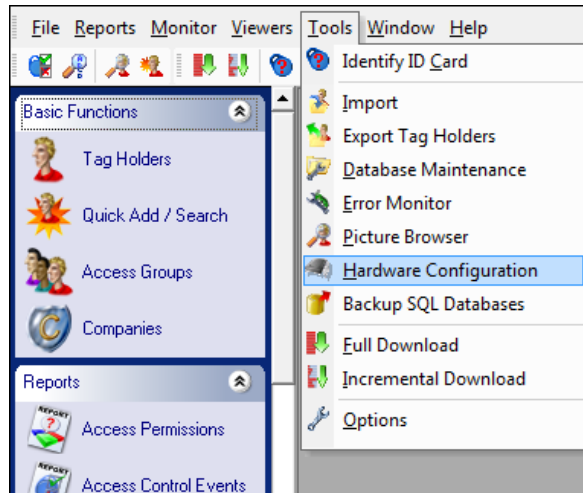


Figure 12

Hardware configuration window

Step 8: Find the device

Select 'Find on Ethernet' in order to look for all controllers connected to the network and display them.

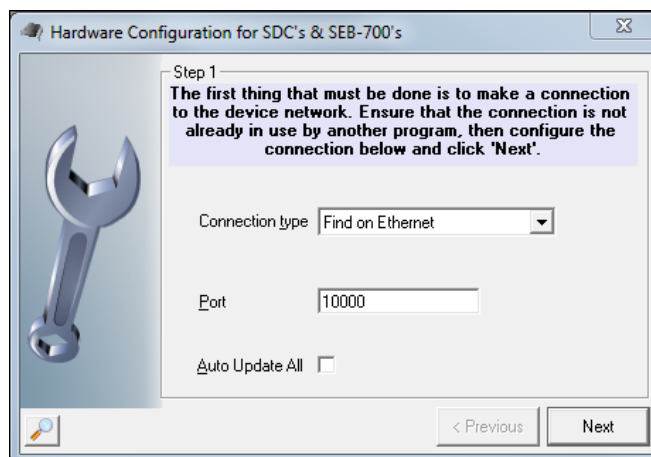


Figure 13

Hardware configuration window

Step 9: Locate the correct controller

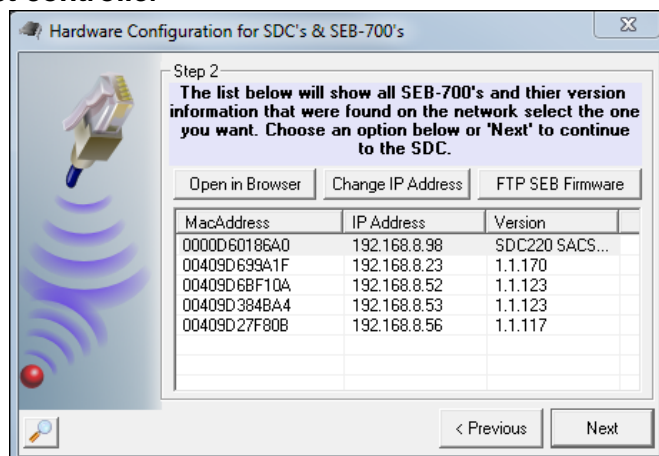


Figure 14

IP addresses available on network

The SDC-220 controller/s will appear in the list, to identify which device it is, you can use the MacAddress that is found on controller to confirm which unit you are working with. The MacAddress and Serial number are on the same sticker.

Step 10: Change the IP address

Once you've located the correct controller, click the **Change IP Address** button.

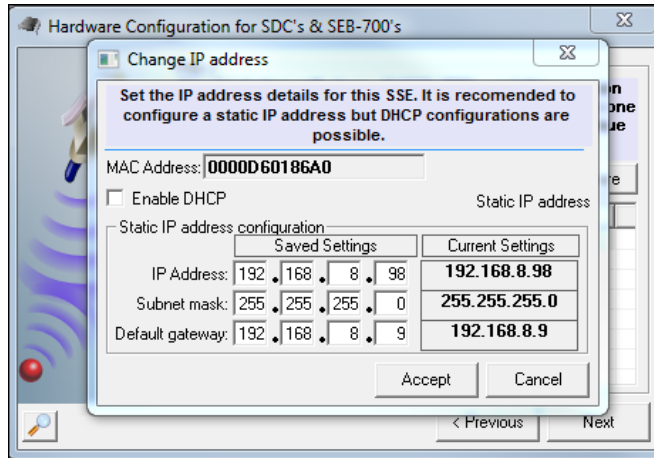


Figure 15

Dialog for changing the IP Address

Set up the network parameters, then click **Accept**. The unit will reboot and reconnect with the new IP address after about 20 seconds.

Product specifications

Power requirements

Operating Voltage (DC)	10 to 14 Vdc
Maximum Current	300 mA

Environmental characteristics

Operating Temperature	0°C to +70°C
Storage Temperature	-10°C to +80°C
Enclosure Rating	IP54

Inputs

Input Type	Digital
Typical Input Voltage	0 to +12 Vdc
Maximum Input Voltage	-18 to 30Vdc
Maximum Input Current	5 mA

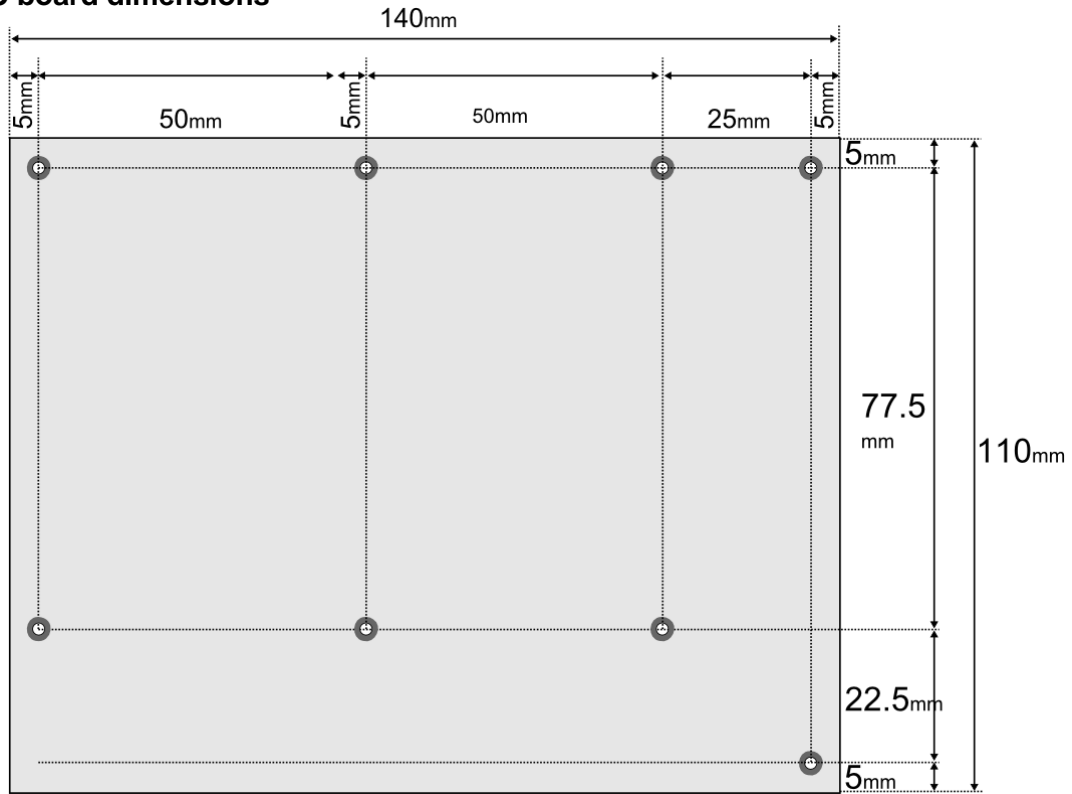
Outputs

Output type	Relay
Maximum voltage (AC)	125Vac
Maximum voltage (DC)	30Vdc
Maximum current	2A
Recommended maximums (Single Relay)	4A at 30Vdc
Maximum switching current (inductive)	500mA

Note: Care must be taken not to exceed the contact ratings listed or damage to the controller board will occur.

RS-485 reader network

Maximum Network Length	1000 meters (Data only)
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Controller PC board dimensions**Figure 16**

Board dimensions and mounting hole layout.