



Quick Start Guide

Introduction

The SEB-720 Remote I/O Expansion Board is an addressable expansion device that attaches onto the RS-485 Reader Network of the SDC-550 Multiple Door Controller. This device provides additional Input and Output points for the SDC-550 Multiple Door Controller. The device contains 2 x relay outputs (internal and external mode) and 4 x digital inputs (see Figure.1). Two RS-485 Proximity readers (SSR-201) and/ or 1 x Wiegand device (including SSR-202 Wiegand Proximity Reader) can be connected to the device.

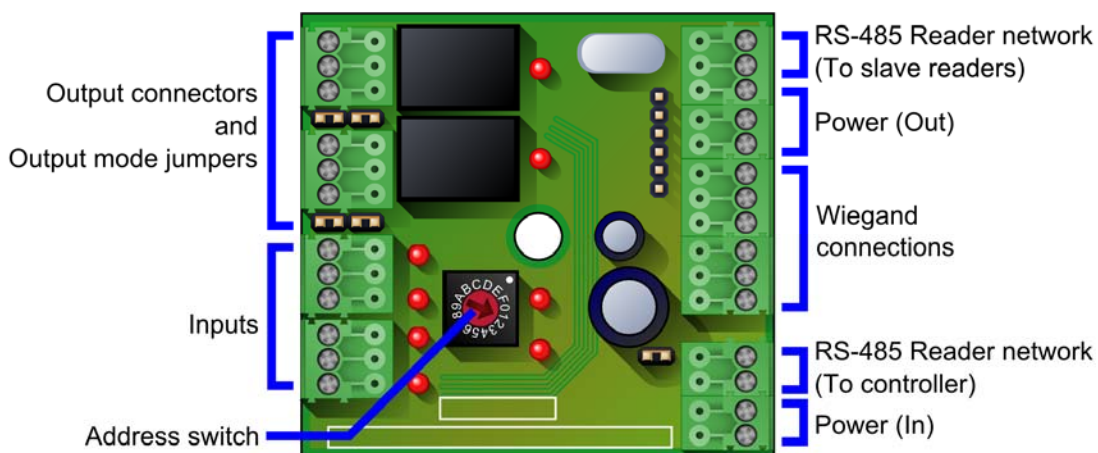


Figure.1
SEB-720 Remote I/O expansion board with feature labels

The SEB-720 Remote I/O Expansion Board can be used as a remote door controller thus avoiding voltage loss for the I/O of a remotely situated door. It can also be used as a remote connection point for additional I/O, for the same reason.

The SEB-720 Remote I/O Expansion Board can be connected to the RS-485 Reader Network in conjunction with RS-485 Proximity Readers (SSR-201), Wiegand to RS-485 Converter Boards (SSI-300-W) and other SEB-720 Remote I/O Expansion boards. The device can be addressed as address 0 to 15 (A to F is the same as 10 to 15) (see Figure.1).

Note: You can connect up to 2 x RS-485 Proximity Readers (SSR-201) and/ or 1 x Wiegand device (including the SSR-202 Wiegand Proximity Reader) to the SEB-720 Remote I/O Expansion Board. It is possible to connect both RS-485 readers and 1 x Wiegand device at the same time. The Wiegand device's address is always assumed to be address 0 because Wiegand devices are non-addressable. The RS-485 Readers will in turn be addressed as 1 and/ or 2.

Connection Options

If the SEB-720 Remote I/O Expansion Board is used as a remote door controller whereby 1 or 2 readers are used in conjunction with the SEB-720 to open a door, then there are 2 possible connection options for the readers (see Figure 1b and Figure 1c). The choice of connection options depend on the availability of free addresses on the RS-485 Reader Network on the SDC-550 Multiple Door Controller (see SDC-550 Multiple Door Controller documentation for the RS-485 Reader Network connectivity options).

Option 1 - Installing the SEB-720 Remote I/O Expansion Board with no readers attached.

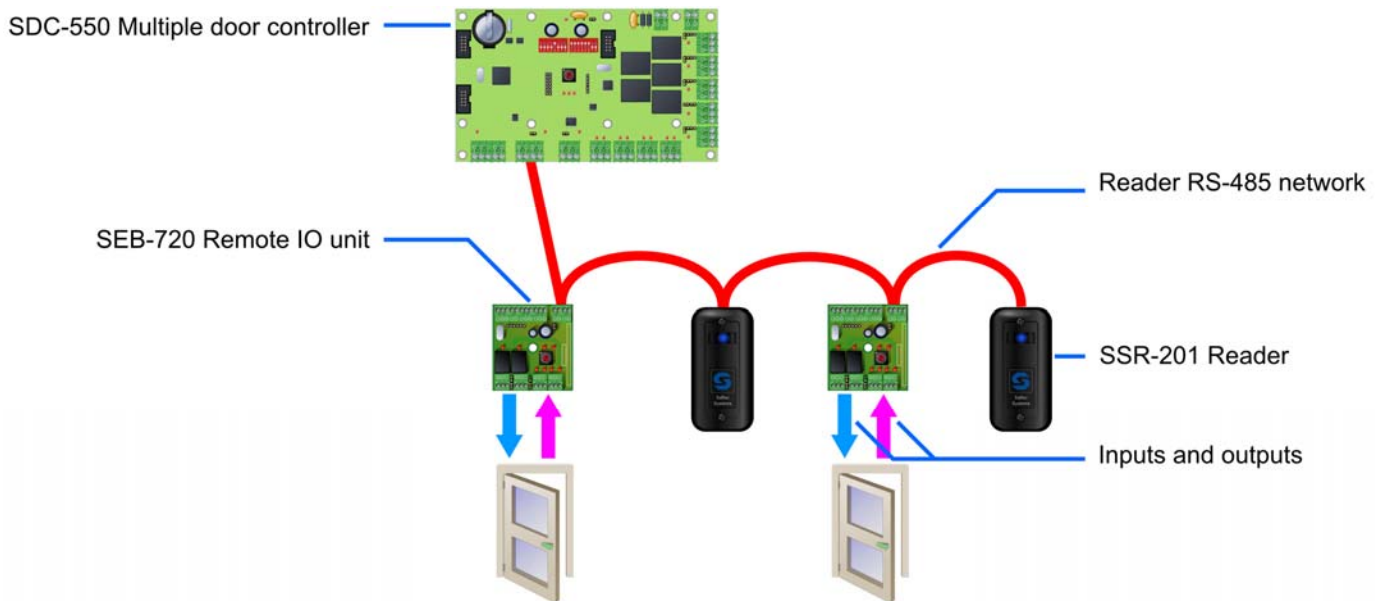


Figure.1b

Connecting the SEB-720 Remote I/O expansion board without readers attached.

With this option all devices (including the SEB-720) each have a unique address on the RS-485 Reader Network. The linking of output switching and input status detection is configured in the SACS Application software.

Option 2 - Installing the SEB-720 Remote I/O Expansion Board with readers attached.

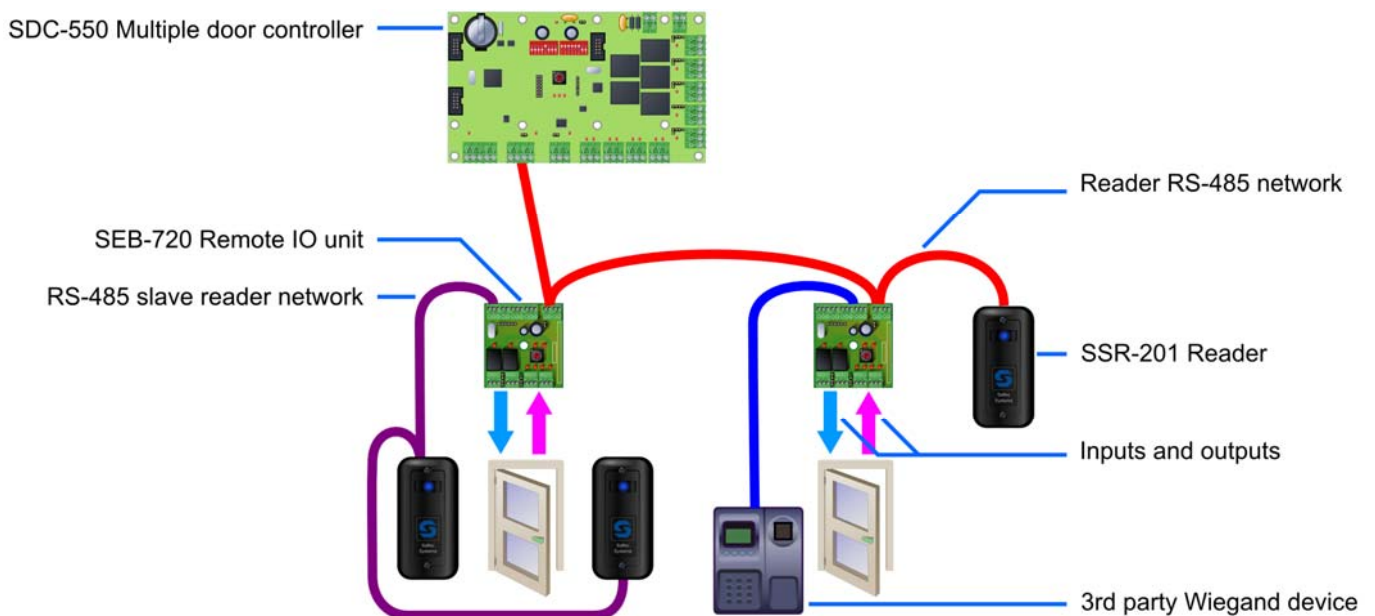


Figure.1c

Connecting the SEB-720 Remote I/O expansion board with readers attached.

With this option the readers are connected directly to the SEB-720 Remote I/O Expansion Board. The Reader addresses can only be 1 and/or 2. If a Wiegand device is connected, this device assumes address 0. The address scheme is configured in the SACS Application software (see SACS documentation on how to address devices).

Step by step procedure to install the SEB-720 Remote I/O Expansion Board

Important Note: Saflec Systems (Pty) Ltd does not recommend untrained and unqualified persons to perform the steps below in order to install the SEB-720 Remote I/O Expansion Board. Only use qualified trained personnel to achieve correct operation and optimum results for installation. However, if you are familiar with the SEB-720 Remote I/O Expansion Board and/ or have successfully installed the device before, you may proceed by carefully and completely following the procedure below. Saflec Systems (Pty) Ltd assumes no responsibility for results related to incorrect installation of the SEB-720 Remote I/O Expansion Board.

Follow these steps to install the SEB-720 Remote I/O Expansion Board:

1. **Ensure that the power on the SDC-550 Multiple Door Controller is turned off** (see SDC-550 Multiple Door Controller Quick Start Guide for instructions on turning off the power). If using an external power source, ensure that the power source is turned off.
2. **Connect the expansion board to the RS-485 Reader network.**

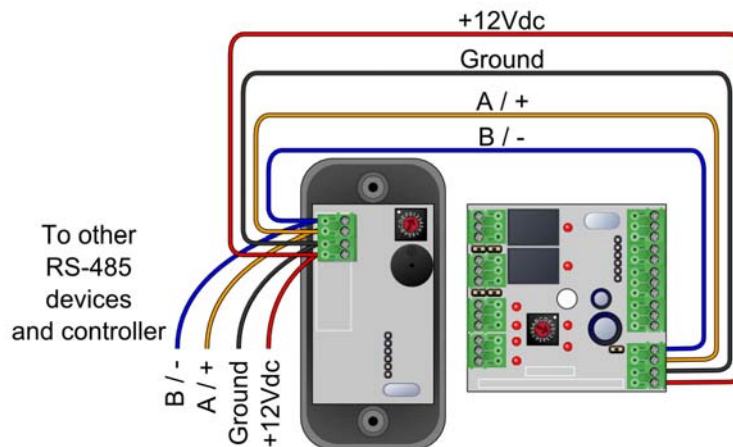


Figure.2

Connecting the SEB-720 Remote I/O Expansion Board to the RS-485 Reader Network

Note: Indicated colors may vary depending on the type of cable used.

3. **Set the desired address for the expansion board.**

Note: Each device on the RS-485 Reader Network requires a unique address. Duplicate addresses will cause communication problems. The address of the expansion board can be number from 0 to 15. (A to F is the same as 10 to 15) This setting can be adjusted by using the rotary switch on the expansion board.



Figure.3

Setting the address of the SEB-720 Remote I/O Expansion Board

4. Connect the readers to the Expansion board. (Optional) (Skip if no readers are required)

4.1 Connect a RS-485 Proximity Reader (SSR-201) to the expansion board.

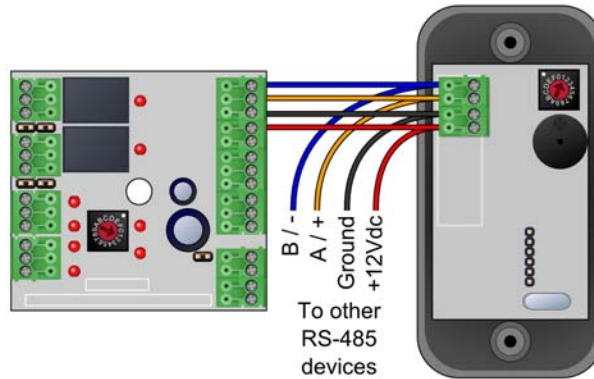


Figure.4a

Connecting the SSR-201 RS-485 Proximity Reader to the SEB-720 Remote I/O Expansion Board AND / OR

4.2 Connect a Wiegand device (including the SSR-202 Wiegand Proximity Reader) to the expansion board.

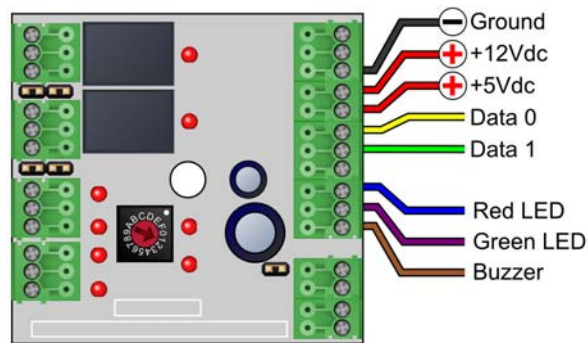


Figure.4b

Connecting a Wiegand Device to the SEB-720 Remote I/O Expansion Board

Note: Indicated colors may vary depending on the type of cable used.

5. Connect the Digital Inputs to the expansion board. (Optional)

Note: If there are no inputs connecting to the expansion board then skip this step.

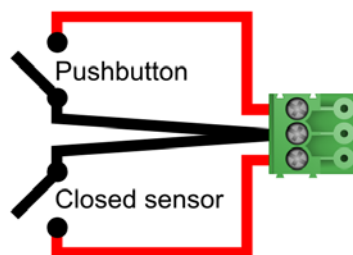


Figure.5

Connecting the Digital Inputs

6. Connect the Digital Outputs to the expansion board. (Optional)

Note: If there are no outputs connecting to the expansion board then skip this step.

The outputs can be configured as a potential free contact that allows external DC or AC power to be switched through the relay (Option 1), or it can provide 12Vdc power to the output device (Option 2). The configuration of the output modes can be accomplished by changing the jumpers next to the selected output connector to the correct setting.

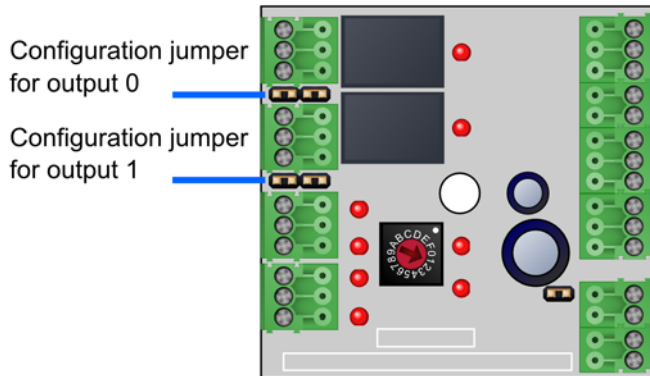


Figure.6a
SEB-720 Output Configuration Jumpers

6.1 Option 1 - Externally Powered Outputs (Default factory setting)

This configuration is the factory default setting and is used when the SEB-720 Remote I/O Expansion Board is located more than 100 meters from its power source (either the SDC-550 Multiple Door Controller or an external PSU) or the power supply for the expansion board has insufficient power to supply the output device.

This is the safer of the two methods because this connection is a potential free connection and any interference or damage to the output device will not effect the operation of the SEB-720 Remote I/O Expansion Board.

Note: Use this method to switch AC powered devices e.g. 24Vac Turnstile solenoids, 220Vac Gate Motors, etc.

- Set the jumper next to the output connector to the correct setting for Externally Powered outputs.



Figure.6b
Jumper configuration for Internally Powered Outputs

- Connect the output as shown in the diagram below.

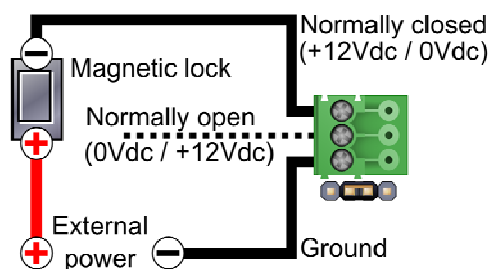


Figure.6c
Connecting the Digital Outputs (Internal mode)

6.2 Option 2 - Internally Powered Outputs

This configuration of the outputs is the simplest way for connecting the outputs. The output device is simply connected directly into the COMMON and Normally Open (NO) connectors or into the COMMON and Normally Closed (NC) connectors depending on the powered device used and its active state requirement.

Important Note: This type of connection is limited by the power requirement of the output device and care must be taken that the power supply source of the SEB-720 Remote I/O Expansion Board is sufficient to supply power to the output device. Care must also be taken to ensure that the current rating of the powered device does not exceed the rating of the output. Connecting outputs in this manner, although being the simplest connection, means that the connection is not potential free and any interferences from the powered device can cause communication failure to occur between the SEB-720 Remote I/O Expansion Board and the RS-485 Reader Network, or cause permanent damage to the SEB-720 Remote I/O Expansion Board.

- Set the jumper next to the output connector to the correct setting for Internally Powered outputs.



Figure.6d

Jumper configuration for Internally Powered Outputs

- Connect the output as shown in the diagram below.

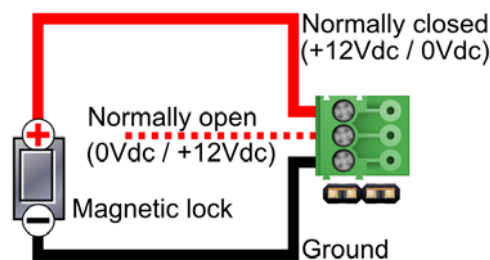


Figure.6e

Connecting the Digital Outputs (Internal mode)

7. Connect the expansion board to the power supply.

Note: The power supply must be a 12Vdc power supply capable of supplying 300mA. The expansion board can be powered from the SDC-550 Multiple Door Controller provided that the controller's supply can deliver sufficient power (300mA per expansion board) and the cable distance between the two devices does not exceed 100 meters.

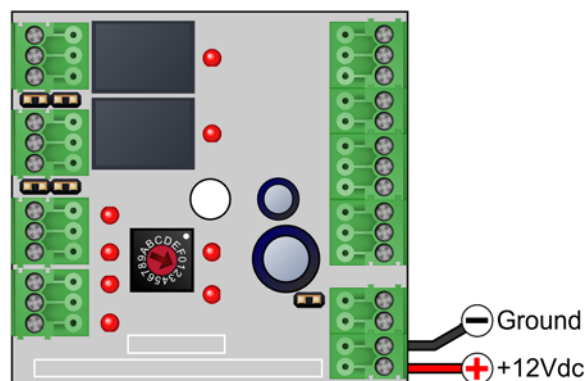


Figure.7

Connecting the power to the SEB-720 Remote I/O Expansion Board

Notes:

PRODUCT SPECIFICATIONS	
Power requirements	
Operating Voltage (DC)	12Vdc
Maximum Current (with Externally Powered outputs)	50mA
Maximum Current (Including two SSR-001 proximity card readers)	300mA
Environmental characteristics	
Operating Temperature	0°C to +70°C
Storage Temperature	-10°C to +80°C
Inputs	
Input Type	Digital
Typical Input Voltage (Internal Mode)	0 to +12Vdc
Maximum Input Voltage	-12Vdc to 36Vdc
Maximum Input Current	7.3mA
Outputs	
Output type	Relay
Maximum voltage (AC)	250Vac
Maximum voltage (DC)	220Vdc
Maximum current	2A
Recommended maximums (Single Relay)	850mA at 30Vdc
Maximum switching current (inductive)	500mA
Note: Care must be taken not to exceed the contact ratings listed or damage to the expansion board will occur.	
RS-485 reader network	
Transient Protection	Yes
Maximum Network Length	500 meters
Wiegand Input	
Specification:	TLL input with 4k7 Pull-up Resistor to 5V DC.
Max Voltage on terminal	-10 to +20V referenced to ground
V Input Low	< 1V
V Input High	> 3V