

SEB-721 Remote I/O RF Door Expansion Board

Revision 1.0 - (November 25, 2014)

Quick Start Guide

Introduction

The SEB-721 Remote I/O RF Door 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 or the SDC-520 Multiple Door Ethernet Controller. The device contains 2 x relay outputs (internal and external mode) and 4 x digital inputs (see Figure.1).

The on-board RF module is used as a reader for code-hopping or rolling-code RF remotes.



Figure.1 SEB-721 Remote I/O RF Door Expansion Board with feature labels

The SEB-721 Remote I/O RF Door 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-721 Remote I/O RF Door 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-301-W) and other SEB-721 Remote I/O RF Door Expansion boards. The device can be addressed as address 0 to 15 (A to F is the same as 10 to 15) using the address switch (see Figure.1).

Connection Options

The SEB-721 Remote I/O RF Door Expansion Board is used as a remote door controller and a robust solution for parking areas. The SEB-721 Remote I/O RF Door Expansion Board connects on the Reader RS-485 network of the controller. Both the SDC-520 Multiple Door Ethernet Controller and the SDC-550 Multiple Door Controller can be used as the main controller. Please see Figure 1b for a graphical example of how to connect the SEB-721 I/O RF Door Expansion Board to the SDC-550 Multiple Door Controller.

Installing the SEB-721 Remote I/O RF Door Expansion Board



Connecting the SEB-721 Remote I/O RF Door Expansion Board

With this installation all devices (including the SEB-721) 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.

Step by step procedure to install the SEB-721 Remote I/O RF Door 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-721 Remote I/O RF Door Expansion Board. Only use qualified trained personnel to achieve correct operation and optimum results for installation. However, if you are familiar with the SEB-721 Remote I/O RF Door 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-721 Remote I/O RF Door Expansion Board.

Follow these steps to install the SEB-721 Remote I/O RF Door 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-721 Remote I/O RF Door 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-721 Remote I/O RF Door Expansion Board

4. 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.4 Connecting the Digital Inputs

5. 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.5a SEB-721 Output Configuration Jumpers

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

This configuration is the factory default setting and is used when the SEB-721 Remote I/O RF Door 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-721 Remote I/O RF Door 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.5b

Jumper configuration for Externally Powered Outputs

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• Connect the output as shown in the diagram below.



Figure.5c Connecting the Digital Outputs (External mode)

5.2 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-721 Remote I/O RF Door 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-721 Remote I/O RF Door Expansion Board and the RS-485 Reader Network, or cause permanent damage to the SEB-721 Remote I/O RF Door Expansion Board.

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



• Connect the output as shown in the diagram below.



Figure.5e Connecting the Digital Outputs (Internal mode)

6. 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.6 Connecting the power to the SEB-721 Remote I/O RF Door Expansion Board

Configuration of the remote on the software

The SEB-721 Remote I/O RF Door Expansion Board is capable of managing any code hopping remote with up to 4 buttons. Each button will be recognized on the system as a different reader. This means that buttons 1 to 4 should be configured in the SACS software as separate slave readers to the SEB-721. The "Location" on the software will be "Terminal x" where x is the number on the address switch of the SEB-721 Remote I/O RF Door Expansion Board. The terminal or slave address will be "Tx Button x" where x is the number of the button on the remote that will be used. This allows you to control different devices based on which button has been pressed on the remote.

Notes:

PRODUCT SPECIFICATIONS	
Power requirements	
Operating Voltage (DC)	12Vdc
Maximum Current (with Externally Powered outputs)	50mA
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.	