

Quick Start Guide

Introduction

The SSI-302-W is a board designed to connect Wiegand compatible devices to the RS-485 reader network used by SDC controllers, and the SEB-720 Remote IO board.

This unit can be power isolated, allowing the Wiegand device to have its own power supply without causing grounding issues on the network side of the device. This would mean that it should be powered from a 12Vdc power source on both the RS-485 side of the device and from the Wiegand device side separately for the isolation. This can be overridden using the isolation override jumpers which links the power on both sides if necessary, but care must be taken to use too much power on the Wiegand device to prevent damage to the board.

This device has been designed to be used with the following devices:

- SDC controller boards (Primary purpose).
- SEB-720 Remote IO board
- And any 3rd party Wiegand compatible device

It mimics a proximity reader on the RS-485 side and has a Wiegand host connection on the other side, which allows it to translate data between the two standards. It is also capable of communicating using the OSDP protocol, allowing it to be used as a legacy Wiegand to OSDP convertor.

The unit is addressed on the RS-485 reader network using the status 8 segment display and the config button next to it. This display can also be used to see the status of the device and configure other settings. When the decimal point is flashing rapidly, then the network communications to the controller has been established, when it flashes slowly the device is working, but the network connection has not been established.

A dash is shown to indicate when a Wiegand number has been received from the Wiegand interface.

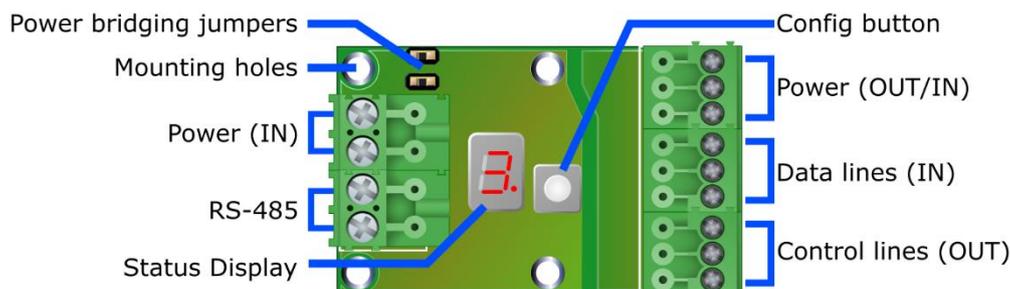
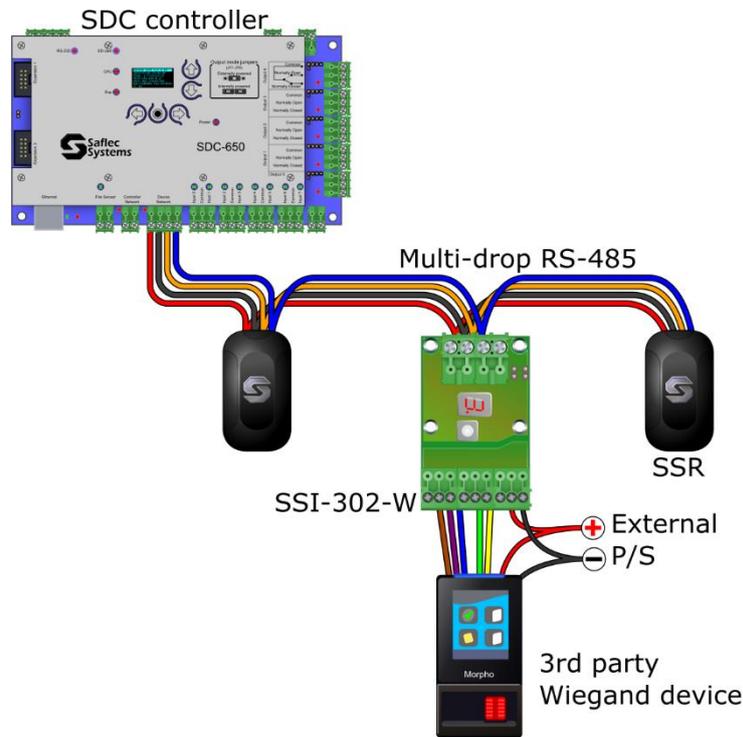


Figure 1
SSI-302-W with feature labels

**Figure 2**

System layout showing Wiegand-compatible 3rd party device, readers and SSI-302-W interface board connected to SDC-650 controller

Step 1: Set the address using the config button and status display

The SSI-302-W communicates with the master device (e.g. SDC-650 controller) via a multi-drop RS-485 communications network. Each device on this network requires a unique address for communications and identification. Duplicate addresses will cause communication problems.

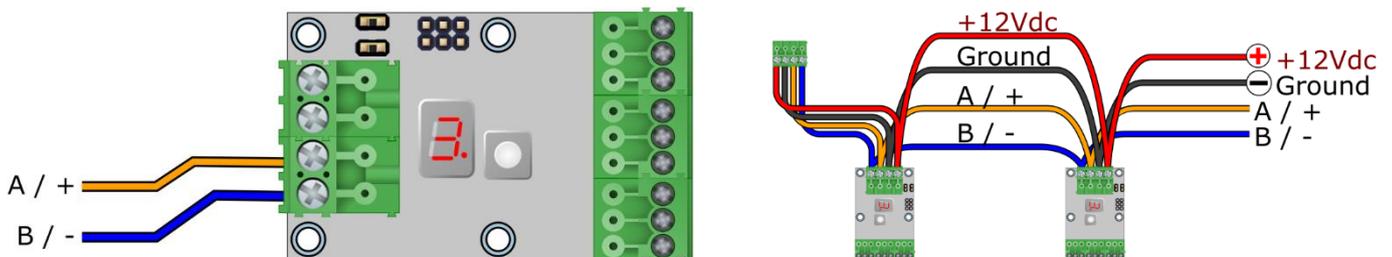
To set the address the config button is long-pressed for 2 seconds – the address will flash. Pressing the button now will cycle the address between 0 and F (ie. 0 to 15), then back to 0. Long-pressing for 2seconds again will save the address setting, leaving it for 15 will cancel the changes.

**Figure 3**
Status display and config button

Note: This address of the interface board will be configured to be the address of a reader in the SACS software.

Step 2: Connect the RS-485 reader network

Connect the RS-485 network to the other readers or compatible devices on the line (See Figures 2, 4 and 6). If this is the first device on the line, connect it to the controller board (SDC-xxx or SEB-720). Each device on the RS-485 line will have a positive (A) and negative (B) line which are all connected together.

**Figure 4**

Wiring diagrams for the RS-485 connections on the SSI-302-W interface board, also showing connector of SDC controller and another SSI-302-W.

Step 3: Connect the Wiegand device and power

The Wiegand device communicates with the SSI-302-W via six signalling lines which can be broken into the data lines (Data 0, Data 1 and Present) and the control lines (Red LED, Green LED and Buzzer). Connect these lines ensuring that the correct cables are used.

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

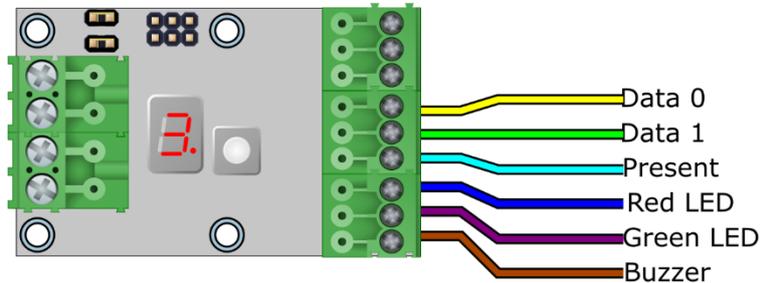


Figure 5

Wiring diagram for the Wiegand connections on the SSI-302-W interface board.

Step 4: Connect the power

This board is designed to be able to be used in power isolated mode or pass-through mode:

Pass-through mode

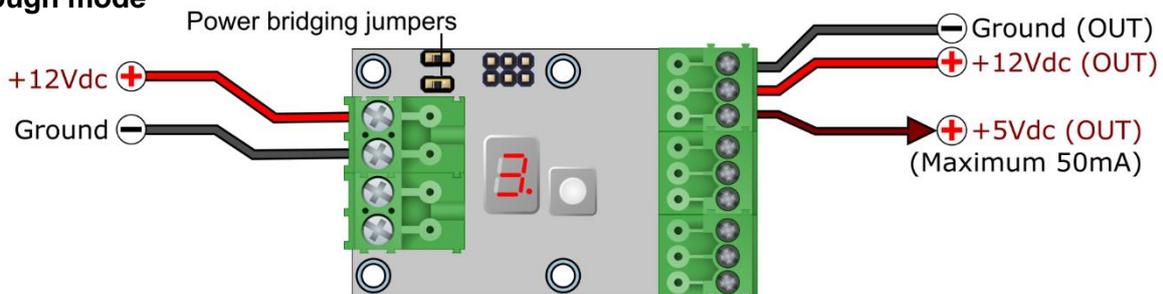


Figure 6

Power pass-through mode – NOTE the power bridging jumpers in place

The controller is able to power devices that do not draw too much power in pass-through mode. This is enabled by shorting the power bridging jumpers as shown in figure 6.

Note: The number of devices that can be powered from the controller is limited due to various factors like thickness or length of the cable or the power draw of all devices on the line. It is recommended that power-isolated mode is used with a separate external power supply for each 3rd party device.

Connect the Ground and +12Vdc lines on the Wiegand connector side to the 3rd party Wiegand device. If the 3rd party Wiegand device requires a +5Vdc connection, the SSI-302-W is able to supply a maximum of 50mA from this connection.

Power isolated mode

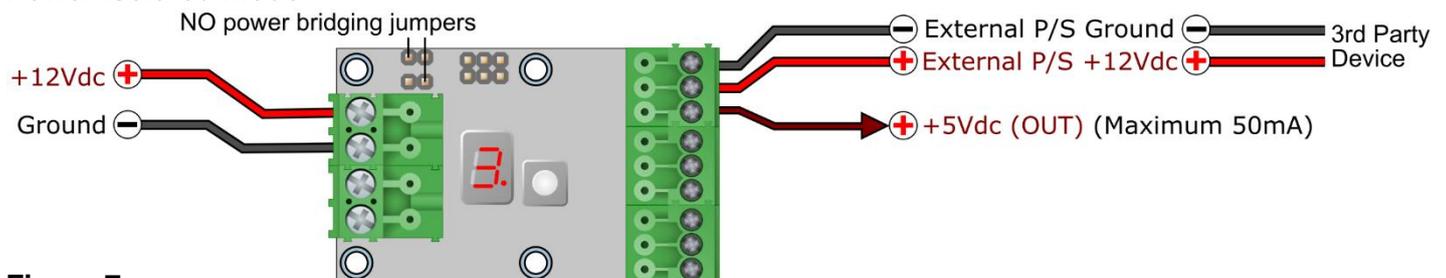


Figure 7

Power isolated mode – NOTE the power bridging jumpers are removed

As discussed above, it is recommended that power-isolated mode is used when powering 3rd party devices. In order to properly support this mode the power bridging jumpers are removed as per figure 7 which essentially splits the interface board into two separate parts which both have to be powered.

Connect the Ground and +12Vdc lines on the Wiegand connector side to the same power supply that is powering the 3rd party Wiegand device.

Additional (Optional) steps

There are a few more settings that can be configured using the Status display and config button:

PRODUCT SPECIFICATIONS

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Power requirements	
Operating Voltage (DC)	9 to 14 Vdc
Current	30 mA
Environmental characteristics	
Operating Temperature	0°C to +70°C
Storage Temperature	-10°C to +80°C
Digital Outputs (Wiegand)	
Specification:	Open collector transistor output with 4k7 Pull-up Resistor to 5Vdc.
Max Voltage on terminal	-2 to +20V referenced to ground
Max Load	100mA at 5Vdc
Inputs	
Specification:	TLL input with 4k7 Pull-up Resistor to 5Vdc.
Max Voltage on terminal	-10 to +20V referenced to ground
V Input Low	< 1V
V Input High	> 3V
Wiegand encodings	
Wiegand length	34 bits (32 bits data)/26 bits (24 bits data)
Site code length	0 bits (No site code)
Start parity bit	Even parity over the first half of the data bits
Stop parity bit	Odd parity over the last half of the data bits