



# Saflec Systems (Pty) Ltd

Registration: 2003/009218/07

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RE: Saflec Systems Architecture

## **Introduction:**

Saflec is a South African company and all hardware & software development is done at our offices in Johannesburg. We have designed our system with the installers and end user in mind, always thinking of ways to make the system more user-friendly and easier to use while keeping it simple to design and install. Saflec has to date a large list of satisfied clients that are using our system in all industries, including corporate, mining and government.

## **Software Architecture:**

Saflec offers three server software options for all sizes of installations:

- Basic Edition software
  - 8 doors can be configured
  - Proximity readers only
  - Can not be used with client software
  - MS SQL as database platform
  - Once-off license
  - All standard functions included eg: reporting, anti-pass back and zone control
  - Flexible user password control
  
- Professional Edition software
  - 12 doors can be configured
  - Proximity and biometric readers (Morpho and Virdi)
  - Can use client software for remote administration
  - MS SQL as database platform
  - Once-off license
  - All standard functions included eg: reporting, anti-pass back and zone control
  - Flexible user password control



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- Corporate Edition software
    - Unlimited doors
    - All existing integration included
    - Can use client software for remote administration
    - MS SQL as database platform
    - Once-off license
    - All standard functions included eg: reporting, anti-pass back and zone control
    - Multiple companies support
    - Flexible GUI interface
    - Multiple site support
    - Extremely flexible event-based action model.
    - Configurable extra data fields with automatic lists, dropdown lists, photographs or notes fields
    - Sequencing tasks (For example: enforcing T&A clockings before allowing the tag holder to leave)
    - Extremely flexible event-based action model
    - Flexible user password control
    - Flexible plug-in modules for further integration to 3<sup>rd</sup> party applications

Saflec offers two client software applications for remote administration on Professional and Corporate Additions:

- Client addition software
  - This has all the functions of the server software
- Personnel Assistant (PA)
  - Built-in card designer for printing cards or labels at a reception area
  - Visitor capturing with flexible options (For example: mandatory fields)
  - Configurable wizard for information capture



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## Hardware Architecture (Controllers & Expansion boards):

Our hardware doesn't require any interface cards in the computers and our main communication is done on Ethernet connections. We have combined the typical topology of having a master controller and door controllers into one, by doing this we only have controllers that are intelligent and decision making is done on the door controller level. The access control information is downloaded to the controllers which makes the system more reliable as it is not dependant on external factors like operating systems, computers or networks.

Every controller can be linked on an RS-485 device network that can have up to 16 controllers. RS-485 is an easy and secure way of connecting multiple controllers and allows long cable runs. An entire system can have many device networks which means that the system can essentially be as large as necessary, limited only by the server and network capabilities. One of our larger systems to date consists of more than 200 device networks, 500 controllers and 4000 access points spread across the whole of South Africa, but centrally managed.

Saflec offers a variety of controllers with or without Ethernet:

- Two door Ethernet Controller (SDC-220)
  - Controller with built-in Ethernet connectivity.
- Ethernet controller (SDC-520)
  - Controller with built-in Ethernet connectivity and extended memory
- Door controller (SDC-550)
  - Ethernet expansion board available for TCP-IP connectivity and extended memory

The SDC-220 Two Door Ethernet Controller offers the following features:

- Fully offline operation
- 1000 cardholders
- 100 000 transactions stored while in offline mode (No connectivity to the server)
- On-board time/date battery backup
- Micro SD memory.
- Supplied with secure enclosure with Power Supply and battery backup
- RS-485 reader network connection with a maximum of 4 readers.
  - RS-485 readers or Wiegand readers
  - Readers must be powered from the controller
- 4 digital inputs
- 1 Dedicated Fire input
- 1 Dedicated tamper input
- 2 x relay outputs
- No Events or Actions between controllers. Only Anti-Passback between controllers.



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The SDC-225 Sallis Ethernet 8 Door Controller offers the following features:

- Fully offline operation
- 1000 cardholders
- 100 000 transactions stored while in offline mode (No connectivity to the server)
- On-board time/date battery backup
- Micro SD memory.
- Supplied with secure enclosure with Power Supply and battery backup
- RS-485 reader network connection with a maximum of.
  - 1 x Sallis RS-485 router
  - 8 x Sallis RS-485 nodes

The SDC-520 / 550 controllers have the following functionality:

- Fully offline operation
- 3200 cardholders on SDC-550 and 30000 cardholders on SDC-520 (And SDC-550 with SEB-700 expansion)
- 6000 transactions stored while in offline mode (No connectivity to the server)
- 40 000 transactions stored if the Ethernet devices is used.
- Supplied with secure enclosure with Power Supply and battery backup
- Expansion headers for future expansion (SDC-550 Only)
- Isolated RS-485 controller network connection
- Isolated RS-485 reader network connection (Isolated on SDC-52x Only)
- RS-232 connection (SDC-550) or USB connection (SDC-52x)
- 8 digital inputs & 5 relay outputs (SDC-550) and 4 digital inputs & 2 relay outputs (SDC-52x)
- Expandable to 8 doors by using remote I/O expansion units
- Events and Actions between controllers and device Networks.

Saflec manufactured remote I/O expansion units (SEB-710/721/722) to be used with the 5 series door controllers. These units are used to increase the amount of doors controlled by the controller to 8 doors and in cases where the doors are situated far apart.

The SEB-710 units can only connect to the SDC-550 controller by using the expansion header on the controller. The expansion units offer the following

- 8 x outputs (potential free or powered)
- 8 x digital/analogue inputs
- Additional 8 x digital/analogue or 8 x transistor outputs. (Must be used as an input or output.
- External power must be supplied for powered outputs.
- Only the pc board is powered from the SDC-550



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The SEB-721 has a built-in remote receiver to be used with most rolling-code (code hopping) remotes as a longer range option.

- 4 x digital inputs
- 2 x relay outputs
- Can be used with all 5 series controllers
- RS-485 host connection to controller
- Compatible with 1,2,3 & 4 button transmitters

The SEB-722 units have the following connections available:

- Enclosure, 5 Amp PSU and 7aH battery
- 4 x digital inputs
- 2 x relay outputs
- Can be used with all 5 series controllers
- RS-485 host connection to controller
- RS-485 slave reader network for 1-4 readers (SSR-201)
- 2 Wiegand ports for external devices.

## **Hardware Architecture (Readers & data converters):**

We use RS-485 connections on our readers where possible as this makes installations easier and less cable needs to be used. One can have up to 16 devices connected directly to a controller (Up to 10 readers). This gives you the ability to control 5 doors with both In & Out readers, or up to 8 doors using other devices like the remote expansion board or Wiegand boards.

## **Hardware Architecture (Readers & data converters) continued:**

Our readers work on 125 KHz frequency and can read any EM4102, Hi-Tag 1 & 2 cards.

We manufacture the readers with the following connection options:

- SSR-201, RS-485 reader with addressing
- SSR-202, Wiegand reader (can be programmed to send out CLOCK & DATA output) for 3<sup>rd</sup> party applications
- SSR-250D, RS-485 display reader
- SSR-250DKP, RS-485 display with a keypad reader
- SSR-221, USB take-on reader (uses power from USB port and no drivers needed – emulates a USB keyboard)
- SSI-301W, RS485 to Wiegand converter. 12Vdc must be supplied to the RS-485 connector and Wiegand connector

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Saflec recognizes that technology improves on a daily basis. The Wiegand converter board can convert any 16, 24, 32 or 40 bit codes to our RS-485 network so that any external readers can be used. This enables the end user to change between technologies without changing the complete system. We have current interfaces to Morpho, Viridi & Suprema biometric readers so that template management is done with our software and no 3<sup>rd</sup> party interfaces are needed. Any other readers can also be connected to our system as you can still run their software separately if needed.

We are willing to consider integrating other 3<sup>rd</sup> party devices into the software, but this will be handled on a case-by-case basis.

If you have any queries, please don't hesitate to contact us.

Regards

Saflec Systems (Pty) Ltd.