

# SIC-A

## Redundancy Protocols Gateway (PRP/HSR)



- SIC-A is provided with any-to-any protocol conversion that permits the integration of the device with proprietary and legacy protocols in a modern infrastructure with the most recent protocols and redundant topologies.
- SIC-A can work as a multi-protocol converter, as an unmanaged Redbox or as a redundant protocol gateway.
- SIC-A can manage up to 3000 data points of the most common protocols (Modbus, IEC 60870, DLMS, DNP3, ...) or up to 800 data points of advanced protocols as IEC 61850.
- The device is provided with HSR (High-availability Seamless Redundancy) optimal redundancy protocol for

the substation automation as per the IEC 61850 standard. This redundancy is the evolution of the existing Parallel Redundancy Protocol (PRP) also available in the device.

- SIC-A is provided with 4 digital inputs and 4 digital outputs.
- It is especially suited for applications that demand high availability and very short switch over time because it provides zero recovery time in case of the failure of any component. A good example of application may be the protection of automatized electrical substations or the control of synchronized drives, for instance.

## Main applications SIC-A

- Redbox

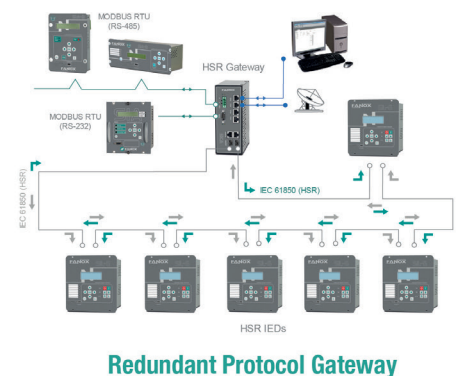
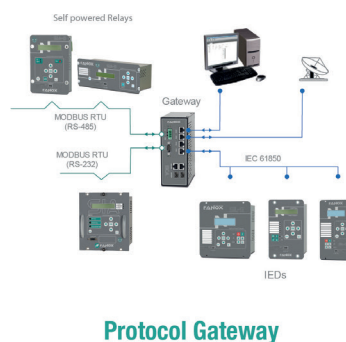
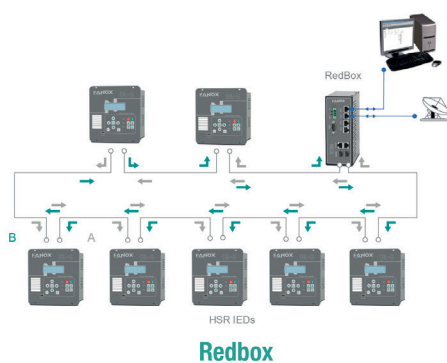
SIC-A working as a Redbox allows the connection of HSR and PRP networks with traditional ones.

- Protocol Gateway

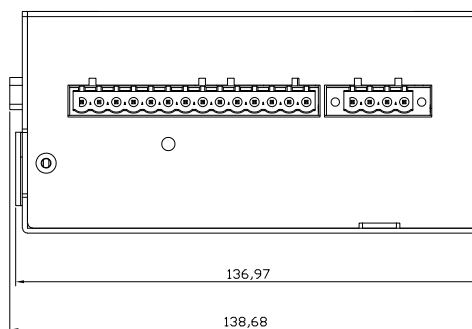
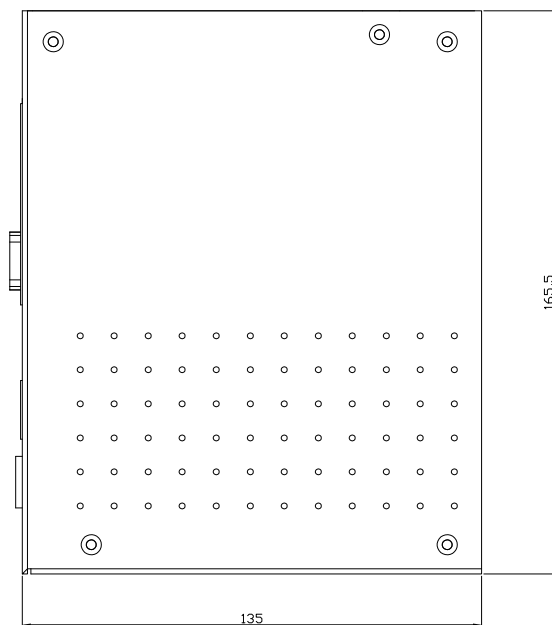
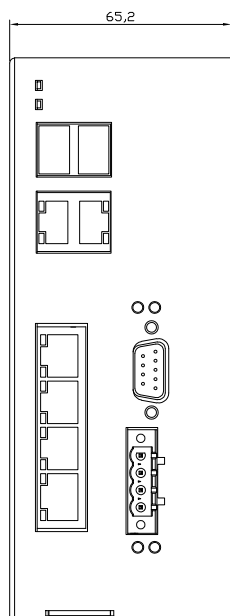
SIC-A device is able of communicating through serial communication RS-232 or RS-485 with multiple devices with a Master serial protocol (Modbus, IEC69870-5-101, IEC60870-5-103, DLMS...) and disposes the information into an Ethernet protocol as IEC 61850 or IEC 60870-5-104. This way, devices with conventional protocols can be integrated in Ethernet networks with advanced protocols.

- Redundant Protocol Gateway

It is the result of the combination of the functionality of a Gateway and the redundancy. With this configuration, SIC-A allows the integration of the devices with serial communications as in a redundant network with an advanced protocol as IEC 61850 or IEC 60870-5-104.



## Dimensions SIC-A



## Technical parameters SIC-A

|                                   |                                                                                                      |
|-----------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Purpose of device (*)</b>      | Redbox                                                                                               |
|                                   | Protocol Gateway                                                                                     |
|                                   | Protocol Redundant Gateway                                                                           |
| <b>Management</b>                 | Easy Connect Configuration utility                                                                   |
| <b>System Protocols</b>           | TCP/IP, UDP/IP, SMTP, POP, HTTP, FTP, SNMP, ICMP, DHCP, BOOTP, Telnet, DNS, ARP, PPPoE, DDNS         |
| <b>Device Security</b>            | NERC/CIP Compliant, SSHv2                                                                            |
| <b>Communication Security</b>     | SSL based VPN tunnel using Blowfish/AES/3DES                                                         |
| <b>Logic Programming</b>          | AND/OR/NOT/Bit SHIFT/Split/Index support for digital and analog data, Delay operations               |
| <b>Network Management</b>         | SNMP Agent                                                                                           |
| <b>Protocol Support (*)</b>       | IEC 60870-5-101/103/104, DNP3 serial/TCP, Modbus RTU/ASCII/TCP, IEC 62056-DLMS, IEC 61850, IEC 61400 |
| <b>Supported Data Point</b>       | IEC 61850: 800                                                                                       |
|                                   | DNP3, IEC 60870, Modbus and other proprietary protocols: 3000                                        |
| <b>Devices Supported</b>          | 20 (10 over serial RS-485 recommended)                                                               |
| <b>Serial interfaces (*)</b>      | 1 RS-485 - Terminals and 1 RS-232- DB9                                                               |
| <b>Ethernet interfaces (*)</b>    | 4 RJ45 (10/100 Base-TX)                                                                              |
| <b>HSR/PRP interfaces (*)</b>     | 2 RJ45 (10/100 Base-TX) or 2 SFP Cage (100Base-FX) 1300nm *                                          |
| <b>Redundancy (*)</b>             | Unmanaged. Compliant implementation of both PRP (IEC 62439-3-4) and HSR (IEC 62439-3-5).             |
| <b>Time Synchronization</b>       | NTC/SNTP/MEA, Protocol Specific (IEC 104,/DNP3, etc.)                                                |
|                                   | RTC on-board                                                                                         |
| <b>Consumption</b>                | 10 W maximum                                                                                         |
| <b>Power supply (*)</b>           | 24-48 Vdc (-20%/+10%)                                                                                |
|                                   | 110-230 Vac/dc (-20%/+10%)                                                                           |
| <b>Inputs/Outputs</b>             | 4 digital inputs and 4 digital outputs                                                               |
| <b>Environmental conditions</b>   | Operating temperature: -40 to 70°C                                                                   |
|                                   | Storage temperature: -40 to 85°C                                                                     |
|                                   | Relative humidity: 95%                                                                               |
| <b>Mechanical characteristics</b> | Metallic box                                                                                         |
|                                   | Standard 35 mm DIN bar or Wall mounting                                                              |
|                                   | Dimensions (HxWxD): 165.5x65.2x135 (mm)                                                              |
|                                   | Weight: 1.3 kg                                                                                       |
|                                   | IP-20                                                                                                |

(\*) Optional depending on model

