

SIC-R

FANOX

Time-aware Redbox Switch

In compliance with IEC 61850-3



Main characteristics

- Intelligent device that integrates advanced field-proven technology for non-packet-loss redundant Ethernet, sub-microsecond synchronization and cybersecurity.
- Able to merge the whole LAN with redundant networks, to interconnect PRP and HSR networks and to extend HSR rings via QuadBox operation.
- In compliance with IEC 61850-3 / IEEE 1613.
- Ports number can be adapted to customer needs.
- Completely secure and reliable infrastructure.

Selection & Ordering data SIC-R

SIC-R		Redbox Switch
0		FUNCTIONS 1x 10/100/1000Base-TX Ethernet copper port (Console/Service/Security) + 4x SFP Cages for 10/100/1000Base-TX Ethernet copper or 100Base-FX/1000Base-X fiber
2		1x 10/100/1000Base-TX Ethernet copper port (Console/Service/Security) + 6x 10/100/1000Base-TX Ethernet copper port + 2x SFP Cages for 10/100/1000Base-TX Ethernet copper or 100Base-FX/1000Base-X fiber
		POWER SUPPLY
	0	6-36 Vdc
	1	48 Vdc
	2	125 Vdc

Example of ordering code:

SIC-R	0	2	SIC-R 02
-------	---	---	----------

Technical specifications

Communication Interfaces	
Features	<ul style="list-style-type: none"> • Multiple PTP Tri-speed Ethernet ports • Zero-Packet-Loss redundancy modes: <ul style="list-style-type: none"> » IEC 62439-3 v3 Clause 5 "High-availability Seamless Redundancy (HSR)" Modes: H, N, T, U, X, HSR-SAN, PRP-HSR, HSR-HSR » EC 62439-3 v3 Clause 4 "Parallel Redundancy Protocol (PRP)" Modes: Duplicate discard, duplicate accept, transparent reception, PRP-HSR • Optional modes: <ul style="list-style-type: none"> » IEC 62439-2 Clause 5 "Media Redundancy Protocol (MRP)" » "Device Level Ring (DLR)" for Ethernet IP » RSTP IEEE802.1w • VLAN support and Ethernet type based or IEEE 802.1P Traffic prioritization • Cut-through and Store&Forward switching capability
Synchronization	
Features	<ul style="list-style-type: none"> • IEEE 1588-2008 PTPv2. Optional IRIGb Master/Slave bridge • Modes: Transparent Clock, Ordinary Clock, Boundary Clock • Profiles: Default, Power, IEC 61850-9-3, AS • IEEE 1588 Stateless Transparent Clock P2P mode to support • IEEE 1588 PRP/HSR redundant networks merging
Other interfaces (not available in all models)	
Features	<ul style="list-style-type: none"> • 1x RS485 port • 2 x USB type A ports • 1x HDMI output • 1x Alarm output (potential-free relay 250VACmax.) • 1x Pulse-Per-Second (PPS) SMA output
Processing performance	
Features	<ul style="list-style-type: none"> • Xilinx Zynq FPGA with embedded dual-core ARM9 processor • 1GB DDR3 RAM Memory • Linux Operating System
Security	
Features	<ul style="list-style-type: none"> • Optional support for IEC 62351-6 wire-speed cryptography • Security infrastructure for IEC 62351-9 Key Exchange facilities • AES 256, HMAC and RSA hardware engines for software and firmware encryption, authentication and signature • Secure boot • System Level audited security (OS & Applications) • Integrated anti-tampering, accelerometers and power consumption measurement sensors to mitigate advanced security attacks • Ethernet port isolated from switching infrastructure to implement security oriented services (NAT, Firewall, VPN, etc.) • IEEE 802.1X access control for port based and MAC based authentication, MAC Port binding and authentication for login security • Optional internal mirroring port with deep packet inspection capability • Optional integrated SIEM agent for IDS and Syslogv5 TLS support for distributed SIEMs approach
Rugged devices	
Features	<ul style="list-style-type: none"> • IEC 61850-3 / IEEE 1613 • Fanless design and full metal enclosure • Redundant Power Supply: 6VDC to 36 VDC • Optional PS: 48VDC / 125VDC • Operating. temperature.: -40°C to +70°C • Storage temperature.: -40°C to +85°C • Optional mounting: DIN rail
Configuration and management	
Features	<ul style="list-style-type: none"> • SNMPv3, SSH • Web-based HTML5-GUI access/configuration • Accessible through HTTP(S) • Configuration profiles and Firmware updates • Real-time network monitoring