Kalkitech

SYNC 3000



SYNC 3000 Series
Substation Data Concentrator

OVERVIEW

The SYNC 3000 family of substation data concentrators feature a powerful protocol conversion engine with support for more than 60 utility protocols. Built on a reliable and ruggedized platform for substation environments, it delivers high-performance processing power needed for a range of applications including substation real-time controller, automated fault file collection, inter control center gateway and many more. It supports IEC 61131-3 standard-based programming to give the user flexibility to easily build complex logic and have decision making capability at the substation level rather than at the control center. Decentralized critical decision making can accelerate problem resolution and increases engineering flexibility. SYNC 3000 runs a security hardened Linux Operating System with communication, data and access security that meet the NERC CIP v5, IEEE1686 and IEC 62351 industry standard compliance requirement. Devices are available with different hardware options including multiple Ethernet and Serial ports.

FEATURES

General
- Protocol Conversion Engine with 60+ protocols
- API support for adding custom protocols and applications
- Multi master communication capability
- Automatic start-up, initialization with restart notification following power restoration
- Disturbance and fault record collection and management
- Time synchronization using IEC 60870/DNP3/SNTP/IRIG-B/IEC 61588/ IEEE 1588 PTP version 2.0
- Supports time synchronization from redundant SNTP servers
- Transparent/tunnelling support for remote management of substation devices (IEDs/RTUs)
- Remote device management using kalki.io including kernel and file system update
- SNMP Agent/ Manager for NMS Integration
- Collect event and disturbance records from substation devices and transmit to control centers
- Network tunnelling and routing support
- Built-in HMI for monitoring and control
- Syslog support for device logging

Reliability
- IEC 61850-3 based rugged hardware for substation environment
- No fans or other moving parts
- Supports device and communication redundancy
- Support power supply redundancy
- Secure all communication paths
- Support for network bonding / Ethernet teaming
- Ethernet link redundancy support (IEC62439-3 PRP and HSR)

Scalability and Upgradability
- Modular design with plug-in serial and Ethernet ports
- Supports up to 8 serial ports and 4 Ethernet ports
- Supports communication port expansion using terminal server and pluggable switch
- Fiber optic Ethernet support
- Wide range of AC and DC power supply



Security
- Support NERC-CIP v5 #
- Compliance Support IEEE1686 Compliance
- Role based access control (OCSP or IEC 62351-8)
- Terminal access with two factor authentications
- Inbuilt firewall
- IEC 62351-3 transport layer security
- IEC 62351-5/DNP3 Secure Authentication
- SSL based VPN support
- Secure password-based locking of configuration project

ORDERING OPTIONS

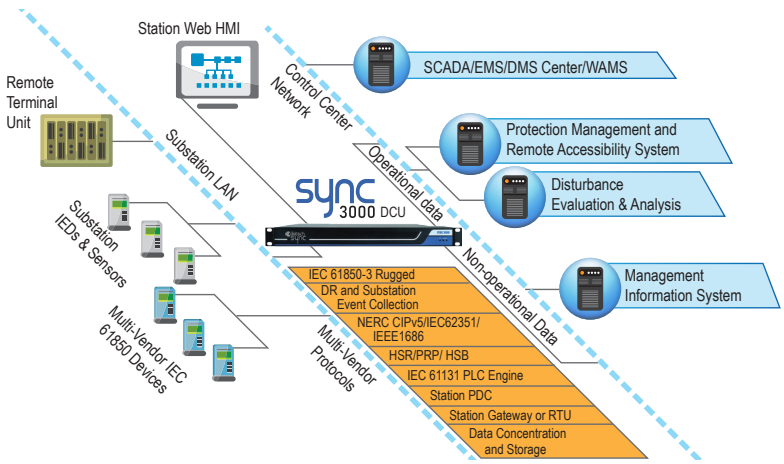
- 8 serial ports, 2 Copper Ethernet ports (S8R2)
- 8 serial ports, 3 Copper Ethernet ports (S8R3)
- 8 serial ports, 4 Copper Ethernet ports (S8R4)
- 8 serial ports, 2 Cu Ethernet ports, 2 Fiber Ethernet ports, (S8R2F2)

RELATED PRODUCTS

- ICD Manager: IED configuration tool based on IEC 61850 standards
- SCL Manager: Substation engineering and design tool based on IEC 61850 standards
- Remote Accessibility System (RAS) and Remote IED configuration tool
- Kalki.io: Distribution Automation and DER Middleware

APPLICATIONS

- Automatic Fault / Disturbance Files Collection
- Control Center Gateway (ICCP / DNP3 /IEC 104)
- IEC 61850 Substation Data Concentrator
- Real Time Substation Controller
- Substation Data Concentrator
- Substation Phasor Data concentrator



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SYNC 3000					
		S8R2	S8R3	S8R4	S8R2F2
Management and Maintenance	Management	Configuration over EasyConnect Software Configuration Tool. Remote Management with kalki.io centralized management system. Other management support: SSH Support / SNMP Support / In-built Web Interface			
	Maintenance	Direct debug over console port or SSH			
	System Protocols	TCP/IP, UDP/IP, HTTPS, SNMP, ICMP, ARP, SSL, SFTP, SSH			
Security	Device Security	Built-in firewall, NERC-CIPv5, IEEE1686 and IEC62351 Support SSHv2 with TOTP Support OCSP/IEC62351-8 Role based access control			
	Communication Security	IEC 62351-3 and -5 (DNP3 secure authentication), Direct TLS support for DNP3.0, Modbus TCP & IEC104. TLS/SSL based VPN support for the high-end security and communication with control center.			
Programming	Logic Programming	AND, OR, NOT, Bit shift, Split, Index support for digital and analog data, Delay operations, IEC 61131-3 based logic engine			
Memory	RAM	512 MB / 1 GB			
	Secondary Storage	1 GB (default), Options – Storage up to 1 TB			
Device Support	Protocol Dependent	Up to 256 devices			
Data Point Support	Data Point Support by Protocol	IEC 61850, ICCP, SPA - Up to 10000 DNP3, IEC 60870, Modbus, and other proprietary protocols - Up to 50000			
Communication Protocol & Interfaces Support	Proprietary Protocols	ABB - RP570, 571, SPA bus SEL - SEL451, 421, 311, 300G Schneider - SEPAM Modbus Alstom – Courier Other – RTK, EXCOM, CMC Master, SPORT Refer to full list of protocols at https:// www.kalkitech.com/knowledge-center/ protocols/			
	Standard Protocols	IEC 60870-5-101/103/104, DNP3 serial/TCP, Modbus RTU/ASCII/TCP, IEC 62056-DLMS, IEC 61850, IEC 61400, ICCP, IEEE C37.118, OPC UA, MQTT			
	Redundancy	Device redundancy Communication and Protocol redundancy Support for Ethernet Teaming, HSR/PRP support			
	Serial Port	8 x RS-232/RS485 ports. RJ45 Connector			
	Ethernet	2 x 10/100/1000 Mbps Cu Ethernet ports. Auto MDIX	2 x 10/100/1000 Mbps Cu Ethernet ports. Auto MDIX 1 x 10/100 Mbps Cu Ethernet port. Auto MDIX.	2 x 10/100/1000 Mbps Cu Ethernet ports. Auto MDIX 2 x 10/100 Mbps Cu Ethernet ports. Auto MDIX.	2 x 100 Mbps Fiber Optic Ethernet Ports. Full duplex. 2 x 10/100 Mbps Cu Ethernet ports. Auto MDIX.
	Isolation / Protection	1500VAC minimum isolation as per IEEE802.3/ANSI X3.263 on Cu Ethernet Ports 2kV Protection on Serial Ports			
Power Requirements	Power Supply	SYNC3000-ACDC_PS: 85 - 264VAC (50/60Hz), 85 - 360VDC Single or dual inputs SYNC3000 -DC_PS: 38 - 68VDC Single or dual inputs Consumption < 15 W			
Physical	Design	Rugged Design, IEC 61850-3 Compliant, Fan less			
	Mounting	Standard 19-inch rackmount			
	Dimensions	440mm x 45mm x 315mm (W x H x D) me Depth - 340mm including connectors			
	LED Indications	Power, LAN Link and activity, Serial Ports RX / TX, Processor Status			
Environmental	Storage Temperature	-40ºC to +85ºC			
	Operating Temperature	-40ºC to +70ºC. as per IEC 60870-2-2			
	Relative Humidity	5% - 95% RH non-condensing as per IEC 60870-2-2			
	Barometric Pressure Test	0-3000 m (101.3kPa to 70kPa) as per IEC 60870-2-2			
	Anti-Vibration & Anti Shock	As per IEC 60870-2-1			
Certifications and Approvals	Emission (EMC)	CISPR 22:2008-09, Ed6.0, EN55022:2006/A1:2007			
	EMI (Power Automation applications)	IEC 61850-3 Compliance: IEC 61000-4-4 EFT, IEC 61000-4-5 Surge, IEC 61000-4-6 Conducted RF, IEC 61000-4-12 Damped Oscillatory Wave, IEC 61000-4-10 Damped Oscillatory Magnetic Field, IEC 61000-4-8 Power Frequency Magnetic Field, IEC 61000-4-11 Voltage dips and interrupts, IEC 61000-4-3 Radiated RF, IEC 61000-4-2 ESD, IEC 61000-4-16 immunity to conducted common mode disturbances			
	ESD Protection	15 KV for air discharge 8 KV for contact discharge			
	Material Compliance	RoHS2, CE, REACH			

[#] Contact sales for more details or product type test reports

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