

SUBSTATION PROTOCOL GATEWAY

sync
2000

SYNC 2000 Series

Overview

SYNC 2000 protocol gateway series of products are substation rugged communication devices with real-time embedded linux operating system, and supports a host of automation protocols including, DNP 3.0, IEC 60870-5-101/103/104, DLMS/COSEM, Modbus as well as proprietary protocols like SPA Bus, courier and various others. Devices come with an option to add an internal pluggable cellular modems, and support secure VPN connections over dynamic IP.

Features

Software Features

- Support more than 40 protocols including IEC 60870-5-101/103/104, IEC 61850, DNP3.0, Modbus RTU/TCP, and DLMS/COSEM
- Automatic startup, initialization with restart notification following the power restoration
- Multi master communication capability
- Upto 10000 data point support*
- Upto 50000 event storage*
- File upload/download support, remote configuration
- Time sync based on NTP/SNTP/NMEA/Protocol specific synchronization (IEC 104/DNP3.0 etc.)
- Transparent/tunneling support for remote configuration and disturbance collection
- Device management using SNMP/webserver*
- Can be configured to be used as a terminal server

Reliability

- IEC 61850-3 compliant hardware#
- I KEMA certified IEC 61850 server*

* Model and protocol dependent



Security

- IEC62351-3 transport layer security
- IEC62351-5/DNP3 secure authentication
- SSL based VPN with AES, encryption over WAN/LAN
- Compliant to NERC-CIP security standards (Refer compliance document for details)

Scalability

- Internal and external pluggable cellular modem (Supports 3G, Designed for 4G/ LTE)
- External pluggable RF/PSTN modem#
- Fibre Optic Ethernet#
- Wide range of AC and DC power supply**

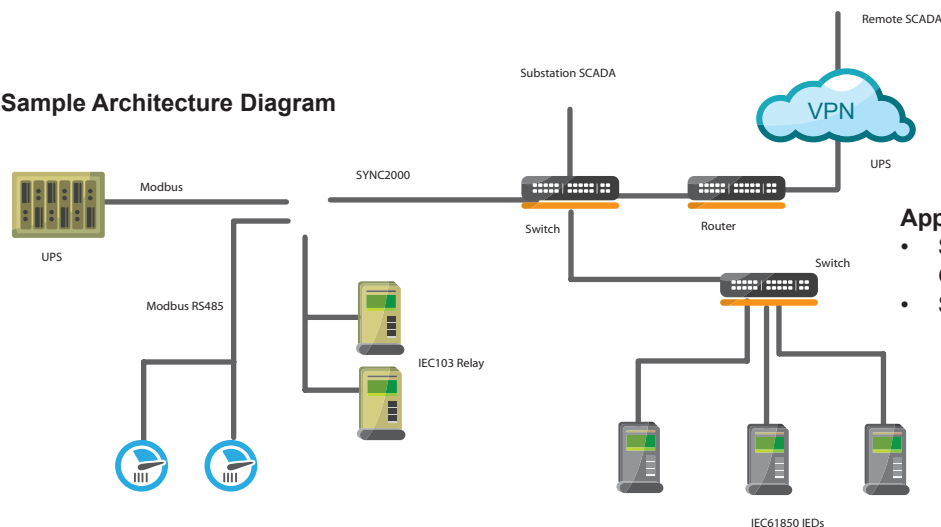
Models

- SYNC 2000 - M1: 2 Serial, 1 Ethernet (Copper)
- SYNC 2000 - M2: 6 Serial, 1 Ethernet (Copper)
- SYNC 2000 - M3: 4 Serial, 2 Ethernet (Copper)
- SYNC 2000 - M4: 6 Serial, 1 Ethernet (Fiber Optic)

Related Products

- SYNC 4011: Control Center Gateway
- SCL Manager: Substation Engineering and Design Tool based on IEC 61850

Sample Architecture Diagram



Applications

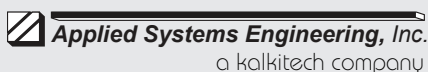
- Substation Protocol Gateway
- SMS Gateway

SPECIFICATION SHEET		SYNC 2000 - M1 (S2R1)	SYNC 2000 - M2/M4 (S6R1/S6F1)	SYNC 2000 - M3 (S4R2)
General	Management	EasyConnect configuration utility/web server/SNMP & SSH Interface over secure network		
	Maintenance	Direct over debug port or console port		
	System Protocols	TCP/IP, UDP/IP, SMTP, HTTP, FTP, SNMP, ICMP, DHCP, ARP, PPPoE		
	Device Security	NERC/CIP compliant, SSHv2 (Refer NERC/CIP compliance document for details)		
	Communication Security	IEC62351-3 and -5 (DNP3 secure authentication - refer DNP3 conformance table for details), SSL based VPN tunnel using Blowfish/AES		
	Logic Programming	AND/OR/NOT/Bit SHIFT/Split/Index support for digital and analog data delay operations		
	Redundancy	Downstream/upstream communication		
	SMS Based Alarm	Available*	Available*	Available*
Communication Capability	Certifications*	IEC61850-10 KEMA, IEC61850-3, CE		
	Standard Protocols	IEC 60870-5-101/103/104, DNP3 serial/TCP, Modbus RTU/ASCII/TCP, IEC62056-DLMS, IEC61850**, SFTP, SNMP, SNT		
	Proprietary Protocols	ABB - RP570, 571, SPA bus SEL - SEL451, 421, 311, 300G Schneider - SEPAM Modbus**	Areva - Courier RTK**, EXCOM**, CMC Master**, SPORT** Triguard peer to peer**	
	Multi-master Protocol	No, one-to-one conversion	Yes, many-to-many conversion	
	Devices Supported			
	SPA	20	20	25
	DNP3, IEC60870, Modbus and other Proprietary Protocols	50	50	64
	Datapoints Supported			
	SPA	800	800	1600
	DNP3, IEC60870, Modbus and other Proprietary Protocols	5000	5000	10000
	Serial			
	Connector	2 RS232/485 - RJ45	4 RS232/485 - RJ45 2 RS232 - RJ45	4 RS232/485/422 - RJ45
	Data Rate	110bps - 38.4kbps		
	Ethernet			
	Connector	1 RJ45	1 RJ45/ST FO**	2 RJ45
	Physical Layer	10/100 Mbps		
	Isolation	1500VAC min per IEEE802.3/ANSI X3.263		
	Fiber Optic Option**	NA	1 multi mode fiber with ST connector	NA
	FO Range	NA	1200 meter	NA
IO Interfaces	Analog	Via R485 expansion module		
	Digital	Via R485 expansion module		
Power Requirements	Power Supply	Option 1: 19 - 58VDC Option 2: 85 - 264VAC 50 - 60Hz, 120 - 370VDC		12-48VDC
	Consumption			
	Main Card	10W		
	Internal Plug-in Modem	8W peak		NA
Plug-in Modem Options	Internal	NA	Supports 3G, Designed for 4G/ LTE	NA
	External	NA	RF modem, PSTN modem	NA
Physical	Dimensions (H x W x D)	164mm x 71mm x 140mm	164mm x 71mm x 140mm	60mm x 137mm x 100mm
	Weight (In grams)	600	600	530
	LED Indications	Power, LAN link/status, serial port RX/TX		
	Mounting	DIN Rail		
Environmental	Operating Temperature	-20°C to 70°C		
	Storage Temperature	-40°C to 80°C		
	Relative Humidity	5% - 95% RH non-condensing		
Emission	Conducted Emission	EN 55022:2006+A 1:2007 Class A		
	Radiated Emission	EN 55022:2006+A 1:2007 Class A		
Immunity	Electrostatic Discharge	IEC 61000-4-2:2001 - +/- 8 kV Contact Discharge, +/- 15 kV Air Discharge		
	Radiated Susceptibility	IEC 61000-4-3: 2006 - 20 V/m		NA
	Electrical Fast Transient/ Burst	IEC 61000-4-4:2004 - +/- 4 kV signal ports @ 2.5kHz, +/-4kV DC power ports, +/- 4 kV earth ground ports 3		NA
	Surge Protection	IEC 61000-4-5:- 2005 +/- 2kV line-to-earth, +/- 1 kV line-to-line		NA
	Induced (Conducted) RFI	IEC 61000-4-6: 2004 - 10V signal ports, 10V DC power ports, 10 V earth ground ports 3		NA
	Magnetic Field	IEC 61000-4-8: 2001 - 40A/m continuous, 1000 A/m for 1s enclosure ports		NA
	Voltage Dips & Interrupts	IEC 61000-4-29: 2000 - 30% for 0.1s, 60% for 0.1s, 100% for 0.05s		NA
	Damped Oscillatory	IEC 61000-4-12: 2001 - 2.5kV common, 1kV diff. Mode @ 1 MHz signal ports and DC power ports		NA

* Available when packet data is not used; ** Need to be ordered separately; # Model dependent

Please contact us for pricing details.

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Product descriptions and features in this document subject to change without notice