SYNC 2100 Series
SYNC 2101 Micro RTU

OVERVIEW

SYNC 2101 is a versatile communication product for smart grid applications from the SYNC 2100 product series. This product is suited for running in a rugged environment with high security data exchange. Integrated I/O capability with ability to transfer field data to a remote location over WAN (Static/Dynamic IP) using M2M Gateway.

FEATURES

General
- Enabled with smart grid protocols IEC 60870-5-101/104, DNP3.0, Modbus, DLMS-COSEM and IEC 61850
- Logic programing engine based on IEC61131-3
- Remote Device Management from Kalki.io
- APIs for adding custom protocol and applications#
- Automatic startup with restart notification following power restoration
- Time synchronization using NTP/SNTP/NMEA/IEEE1588/ IEC60870/DNP3.0
- Remote configuration and software update over air
- Local/remote switch for safer maintenance and operations
- Multi master communication capability
- Transparent/tunneling support for remote device configuration
- Built in Web HMI for monitoring and control
- Event & Alarm Storage
- Event notification over SMS for operator assistance
- SNMP Agent/ Manager for NMS Integration

Hardwired I/O
- Up to 20 hardwired input signals for status indication**
- 6 digital outputs for remote commands
- LED indications for digital inputs and outputs
- Optical isolation for digital inputs and outputs
- I/O operation counter storage for asset maintenance
- 4 channel unipolar and bipolar analog input**
- Auto Calibration and Manual calibration support**

Security
- IEC 62351-3 transport layer security
- IEC 62351-5/DNP3 secure authentication
- SSL based VPN with AES, DES or 3DES encryption over WAN/LAN
- Compliant to NERC-CIP security standards

Add-on Features
- External Radio/PSTN modem can be integrated over serial/Ethernet port
- Internal or external pluggable cellular modem (Supports 3G, designed for 4G/LTE)
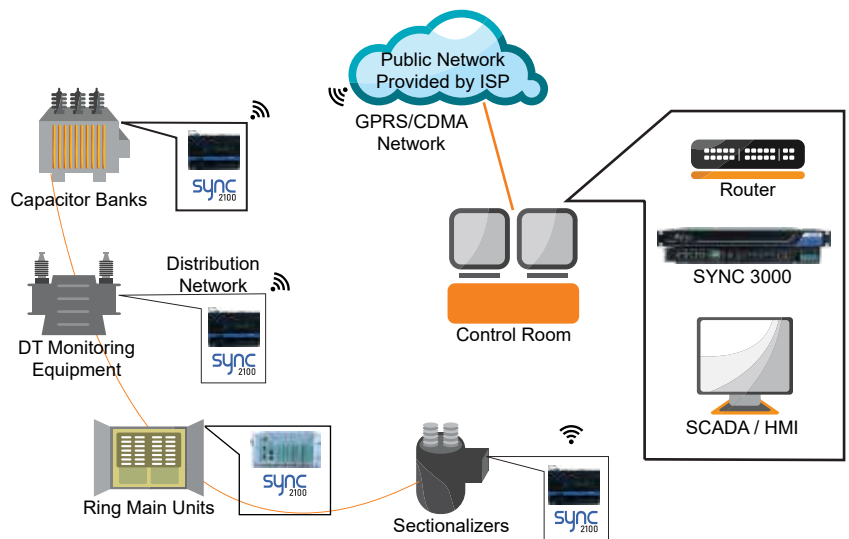
APPLICATIONS

- Distribution automation
  - FPI automation
  - DT monitoring
  - Capacitor bank
- Feeder Automation
  - Auto-reclosure
  - Sectionalizer
- Asset Monitoring
  - Power transformer
  - Distributed generation

RELATED PRODUCTS

- SYNC 4000: Control Center Gateway
- SYNC 2111: Feeder RTU
- Kalki.io: Energy IoT Platfrom

MODELS

- SYNC 2101- M6: 8 DI (12/24VDC), 6 DO, 4 Unipolar AI
- SYNC 2101- M7: 20 DI (12/24VDC), 6 DO, 4 Unipolar AI
- SYNC 2101-M8: 14DI (12/24VDC). 6DO, 4 Unipolar AI, 4 Bipolar AI

SYNC 2101 Micro RTU SPECIFICATIONS		
General		
Management	EasyConnect configuration utility/SNMP & SSH interface over secure network FOTA support over Cellular network Built in Web HMI for monitoring and control	
Maintenance	Direct over debug port or console port	
System Protocols	TCP/IP, UDP/IP, SMTP, POP, HTTP, FTP, SNMP, ICMP, ARP, PPPoE	
Application Protocol	IEC 60870-5-101/104, DNP3 serial/TCP, Modbus RTU/TCP, DLMS, IEC61850 and many more	
Additional Protocols	Refer to full list of protocols at https://www.kalkitech.com/knowledge-center/protocols/	
LED Indications	LAN ready, data transfer, serial port RX/TX status, power, I/O point status	
Security	NERC-CIP Compliant (Refer to NERC-CIP Compliance document for details) SSHv2 SSL based VPN tunnel using Blowfish/AES/3DES IEC62351-3, IEC62351-5 (DNP Secure Authentication-Refer to DNP Manual for details)	
Logic Programming	Basic logic engine with AND/OR/NOT/Bit SHIFT/Split/Index support for digital and analog data delay operations, Advanced logic based on IEC 61131-3	
Serial		
Ports	RJ 45 - 2 connectors	1 RS232 (not available when internal modem is used), 1 RS232/485
	Combicon terminal block - 1 connector	1 RS485
Data Rate	110 bps - 38.4 kbps	
Ethernet		
Ports	1 RJ45	
Physical Layer	10/100 Base-T auto sensing	
Isolation	1500VAC min as per IEEE802.3/ANSI X3.263	
I/O Interfaces		
SYNC 2101-M6	8 DI (12/24VDC), 6DO (2.5- 5A @12VDC), 4AI (4-20mA)	
SYNC 2101-M7	20 DI (12/24VDC), 6DO (2.5- 5A @12VDC), 4AI (4-20mA)	
SYNC 2101-M8	14DI (12/24VDC), 6DO (2.5-5A @12VDC), 4AI (4-20mA), 4AI (0-1mA, ±1mA, 0-20mA, 4-20mA)	
Digital Input and Output Isolation	4kV optical	
Digital Input Configuration	Single or Double indication, Debounce period (8 - 5000ms), Chatter suppression, Inversion, Intermediate suppression, Counter	
Digital Output Configuration	Single or Double Command, SBO, Command mode (pulse/latch), Feedback point, Counter	
Power Requirements		
Power Supply	Option 1 (SYNC2100-PS-ACDC2): 85-264VAC (50/60Hz), 100-370VDC	
	Option 2 (SYNC2100-PS-DC2): 19-58VDC	
	Option 3 (SYNC2100-PS-DC3): 9-29VDC	
Consumption Details	Main Card	4 Watt
	Internal Modem	4 Watt
	8DI, 6DO	2 Watt
	4AI (Option)	2 Watt
	12DI (Option)	1 Watt
Plug-in Modem		
Internal	Supports 3G, Designed for 4G/LTE	
Physical		
Dimensions (H x W x D)	220mm x 150mm x 63.5mm (din rail) 250mm x 150mm x 63.5mm (with wall mounting bracket) (refer hardware manual for mounting options)	
Mounting	Wall/DIN rail	
Weight (approx)	1200 grams	
Environmental		
Operating Temperature	-10°C to 70°C (14°F to 158°F)	
Storage Temperature	-20°C to 80°C (-4°F to 176°F)	
Relative Humidity	5% - 95% RH non condensing	

* Need to order separately
** Model Dependent
\# Refer to conformance table for details