SCU100S-00-EU

Smart Communication Unit

Features

- Compatible with normal&double split transformer application
- Comply with all Chint Power inverters
- Pre-configured for Plug & Play
- Capability with Chint Power O&M platform
- Hardware mounted and pre-wired
- IP66 rated enclosure
- C5-M Anti-corrosion
- Support local real-time monitoring

Chint Power SCU (smart communication unit) integrated multi-functional smart data logger and suitable for C&I and utility systems at different voltage levels. With the function of physical channel conversion, communication protocol conversion, it can meet the requirements of serial inverters, transformer, meter and EMI management, also supports SCADA data communication. SCU can also compatible with normal&double split transformer application through two HPLC connectors, each RS485 and HPLC channel can connect up to 32 inverters.

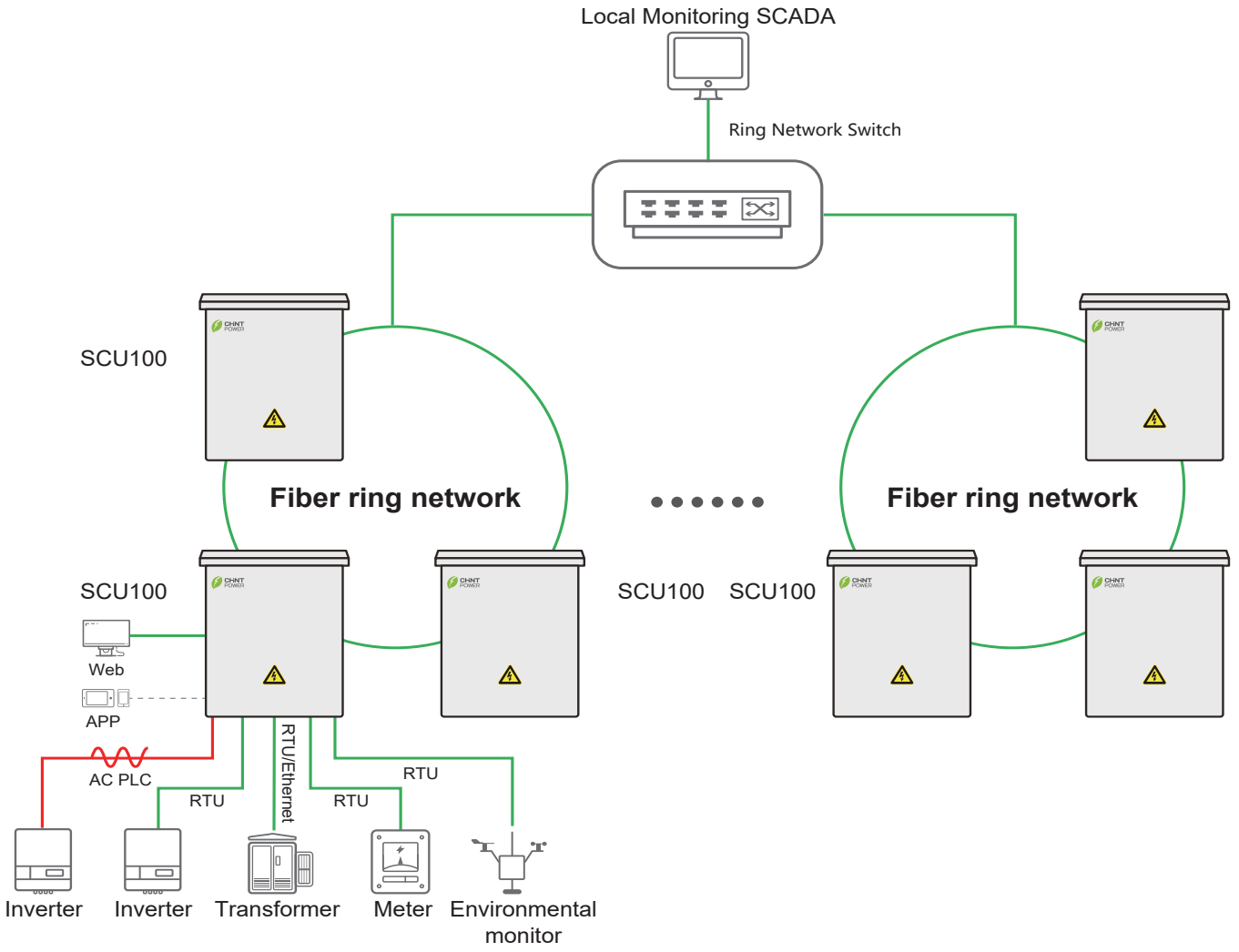
Technical Data

Environment Data	SCU100S-00-EU
Operating Temperature	-30℃ ~ +60℃ (with an awning); -30℃ ~ +40℃ (without an awning)
Ambient Humidity	5%-95%,Non-condensing
Storage Temperature	-40℃ ~ +70℃
Altitude	≤ 4000m
Ingress Protection	IP66
Corrosion Protection	C5-M
Product Parameters	
Product Description	Including: 1*Data logger, 1*24VDC Power Module, 1*Air Switch, 2*FUSE, 2*Surge Protection Support: Ethernet
Electric Parameters	
AC Input	100~240Vac,50/60Hz
AC-PLC Voltage	2* 380V~800Vac, Three-phase
Communication Interface	
RS485	5* 4800~115200bps
ETH	ETH*5 100M/1000Mbps, 100m
Optical Ethernet	SFP*2 100M/1000Mbps
Digital / Analog Input / Output	DI*8, DO*2, AI*4
PT100	2
HPLC	HPLC*2
Communication Protocol	
Ethernet	Modbus-TCP, IEC 60870-5-104, IEC 61850(GOOSE)
RS485	Modbus-RTU
Mechanical Parameters	
Dimensions (W*H*D) (including the mounting bracket)	670mm*750mm*290mm
Weight	30kg
Installation mode	Installed on a wall, support, or pole

Cable Specifications

Cable	Recommended Specifications	Cross-sectional Area Range
Single-phase AC power cable	Two-core outdoorarmored copper cable, Operating voltage to the ground≥300V	4-6 mm^2 ($4mm^2$) 12-10 AWG (12 AWG)
Three-phase AC power cable	Three-core (L1, L2, andL3) outdoor armoredcopper cable, The ground shall be greater than or equal to 1000 V	4-10 mm^2($10mm^2$) 12-8 AWG(8 AWG)
RS485 communications cable	Outdoors or armored shielded twisted pair cable	1.5–2.5 mm^2 ($1.5mm^2$) 16–14 AWG (16AWG)

The sub-array communication scheme is shown as the following figure



Power Line Communication

The PLC module consists of master (PLC-M) and slaves (PLC-S), supporting voltage access up to 800Vac. The PLC-M is integrated in the Communication Box, while the PLC-S is installed in the inverter. Data transmission and information interaction are achieved through the existing AC cable used as the transmission medium. When utilizing power line carrier communication for data transmission, the transmitter first modulates the data onto a high-frequency carrier signal, which is then coupled to the power line via a coupling circuit after power amplification. The receiver demodulates this signal and uploads the data to the MCU (data processing unit).

Broadband PLC primarily utilizes three-phase power cables as its medium for data scheduling and collection purposes. To implement scheduling functionality, each square array adopts a structure consisting of one master and multiple slaves, with packets being sent in broadcast mode. The datalogger sends out scheduling messages that are modulated into high-frequency signals by broadband PLC-M, demodulated from PLC-S, and subsequently sent to the MCU of the inverter for further processing.

The SCU100S Communication Box supports single-channel PLC and double-channel PLC, and the application figures are as follows.

Single-channel PLC application

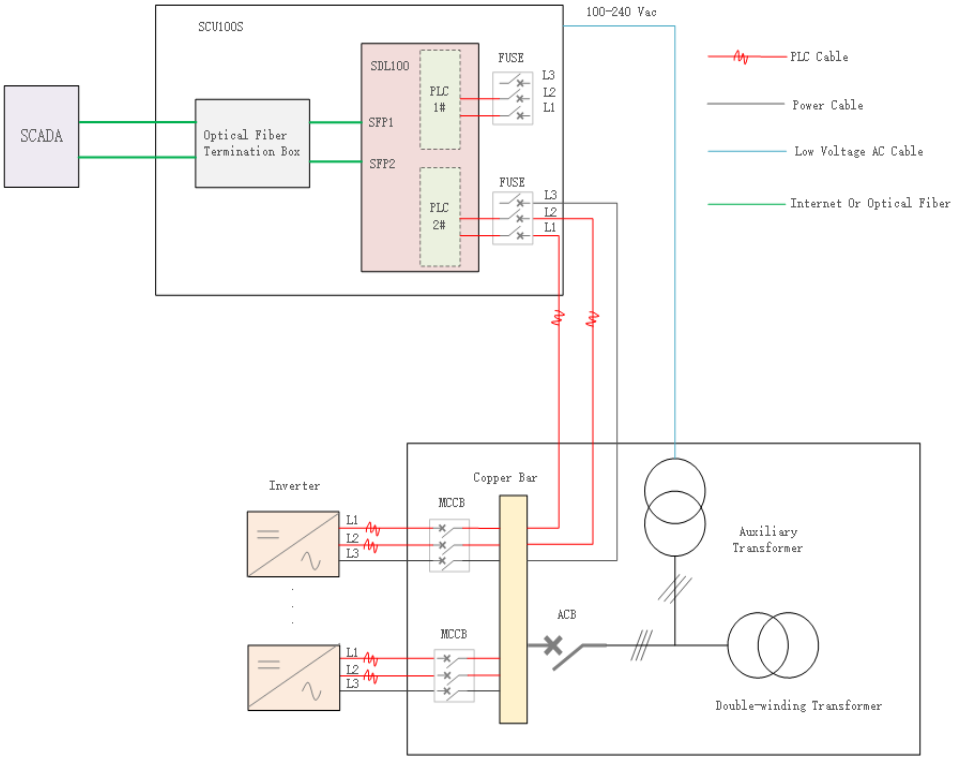


Figure 2. Wiring Schematic Diagram with Double-winding Transformer

Double-channel PLC application

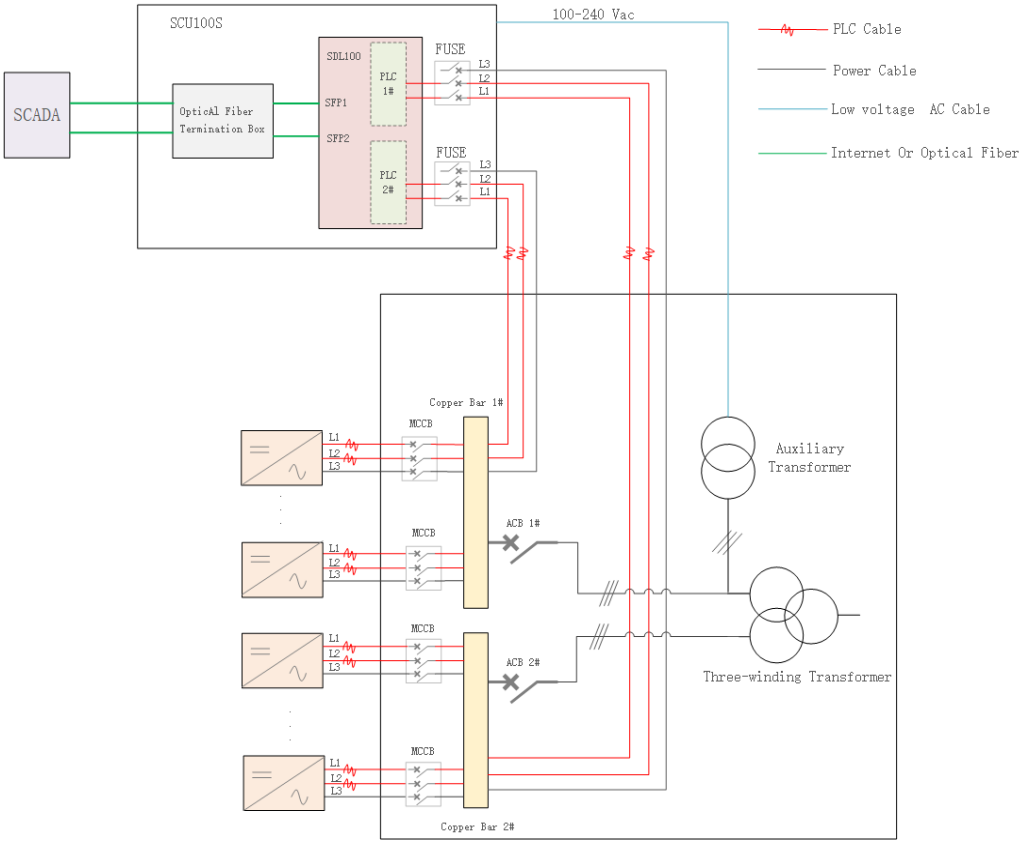


Figure 3. Wiring Schematic Diagram with Three-winding Transformer