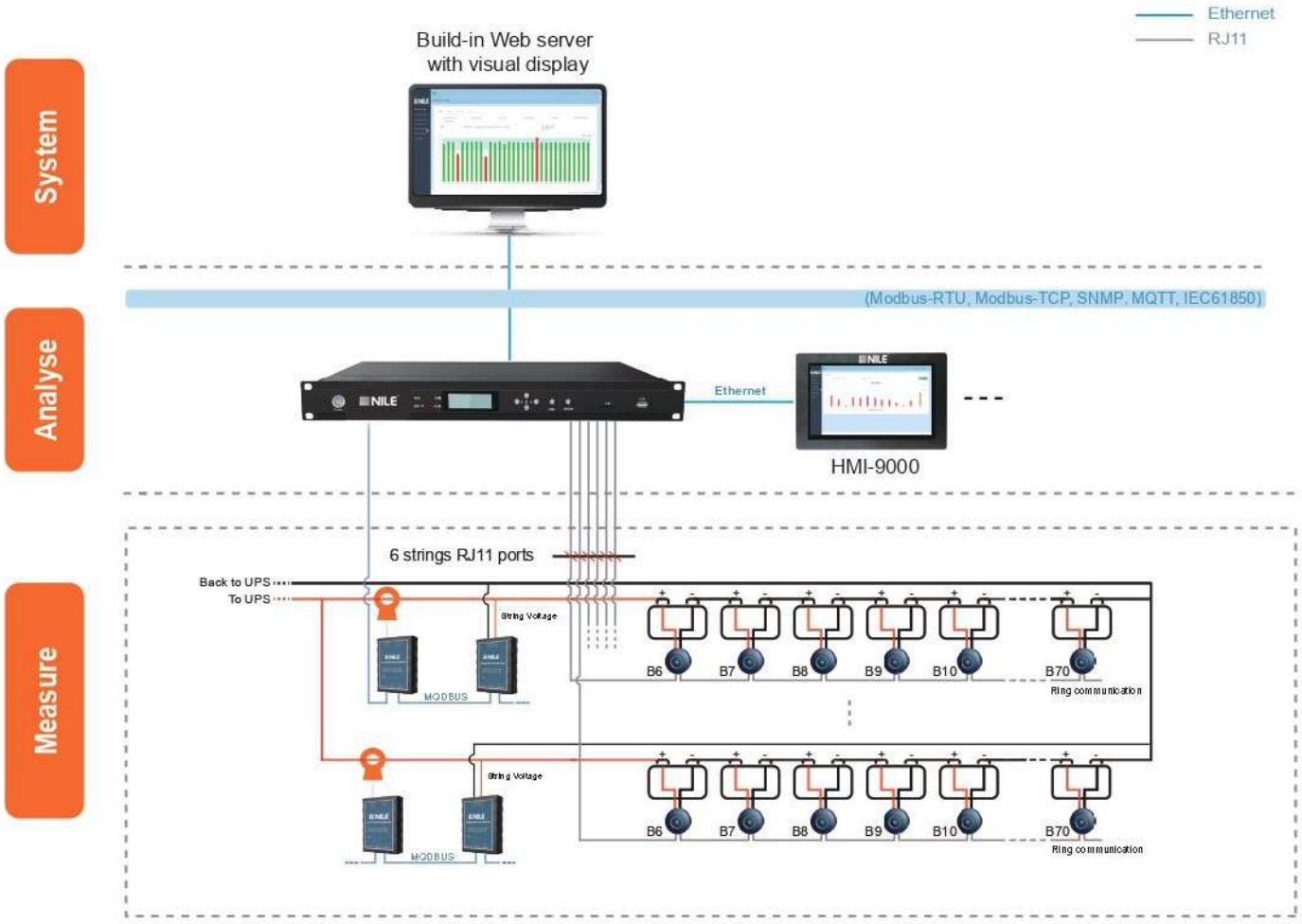
PlatinIran®
Sustainable Energy

Feature

- Apply to UPS and data center application
- Measure lead-acid or multi-pole battery
- Ring communication, any communication failure will not affect other sensors communication
- Monitor battery voltage, current, impedance, insulation resistance, ripple current & voltage, SOC, SOH, etc.
- Support Modbus, SNMP, MQTT and IEC61850 protocols
- Auto-sensing for the battery sensor's ID address
- Dual-source to avoid power shutdown
- Anti-interference design, support to connect with high-frequency UPS
- Comply with IEEE 1188-2005

System Structure



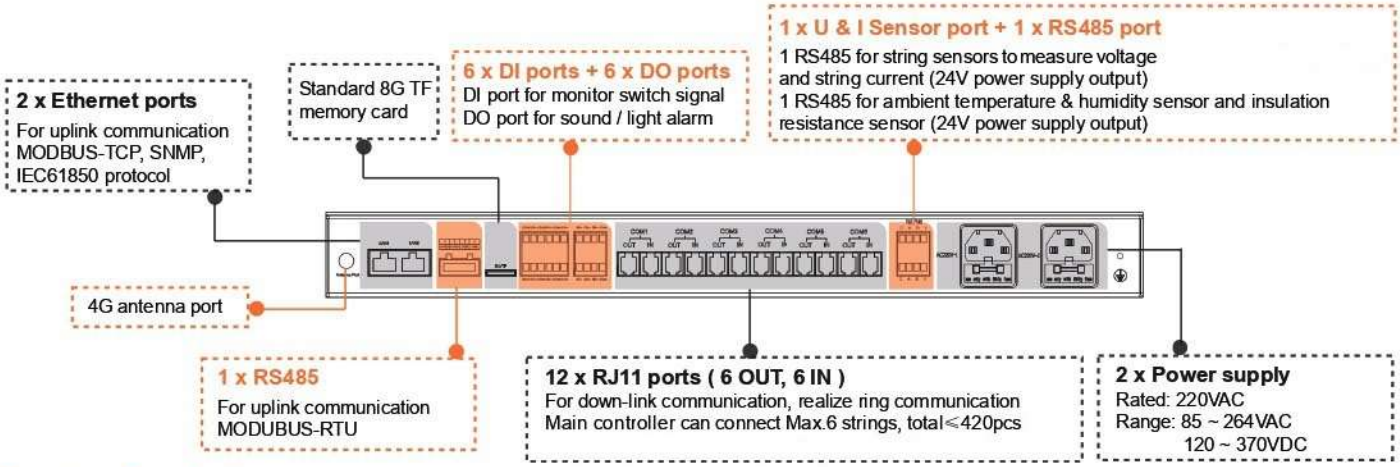
Site 1

Management Layer

Battery Monitoring System Main Controller

- Standard 1 U design for distribution cabinet
- Dual-source to avoid power shutdown
- Built-in web server with visual display
- Monitor Max. 6 strings battery, in a total of 420 batteries
- Measure battery string current & voltage, ripple voltage & current, charge & discharge current, internal temperature, impedance, insulation resistance, ambient temperature & humidity, SOC and SOH
- Alarm message by SMS or Email
- Support Modbus-TCP, Modbus-RTU, SNMP and IEC61850 protocols
- Support MQTT for JSON format to data upload
- 1 RS485 port, 2 Ethernet ports and 1 4G Antenna port to data upload
- 6 DI ports (digital Input connecting)
- 6 DO ports (sound and light alarm)

Dimension and Installation



Technical Specification

CPU	ARM cortex A7 528MHz	**Up-link communication**	2 Ethernet ports (10/100M), MODBUS-TCP, SNMP, IEC61850 1 RS485 port, MODBUS-RTU, baudrate: 9600bps, 19200bps, 38400bps (optional)	
Memory	512MB flash, 4G EMMC + 8G TF memory card	**Down-link communication**	6 Channels RJ11 ports, each port Max. connect ≤ 70pcs batteries, total Max. 420pcs	
Display	2-inch LCD with backlight	**Measure range**	Voltage	1 ~ 6 strings, range: 8 ~ 1000VDC (±0.5%), resolution: 0.01V
MTBF	≥ 100,000 hours		Ripple voltage	1 ~ 6 strings, range: 2 ~ 100V (peak), resolution: 0.01V
Power supply	Rated: 220VAC Range: 85 ~ 264VAC 120 ~ 370VDC		Current	1 ~ 6 strings, range: -2000 ~ 2000ADC (±2.0%, under 15°C ~ 35°C), resolution: 0.01A
Dimension	Standard 19-inch 1 U device 483mm × 206mm × 44.5mm (W*D*H) Open hole: 440mm×46mm (L*H)		Ripple current	1 ~ 6 strings, according to the rated current of the hall sensor, range: DC 0 ~ 0.4*I (peak), resolution: 0.01A
Power consumption	< 15W (only main controller)	**Operation environment**	Working temperature: -15°C ~ 55°C Storage temperature: -40°C ~ 70°C Humidity: 5% ~ 95% non-condensing	
Additional port	6 x DI dry contact 6 x DO relay output, 250VAC/5A or 30VDC/5A	**Extension sensor (optional)**	- RS485 for 1~6 strings string voltage & current measuring - RS485 for Max. 6 strings ambient temperature & humidity measuring - RS485 for 1~6 strings DC insulation resistance measuring	

String Measuring Sensor

String Current Measuring Sensor & Hall Sensor

- One string need 1 current sensor, each current sensor with 2 hall sensor ports
- Measure battery string charge and discharge current, ripple current
- Measure multi-pole battery's string charge and discharge current and ripple current with flexiable module and hall sensor
- Accessories:
  1) Hall sensor and cable: range from 0~±1000A with 2m cable
  2) Communication cable : 5m with RJ45 port

Hall Sensor

Item	Power supply	Measuring range		Environment
		String current	Ripple current	
String Sensor	24VDC (range: 9 ~ 32VDC) Power consumption: <0.5W	1 Hall sensor: -1000 ~ 1000A 2 Hall sensor: -2000 ~ 2000A (±2.0%, 15°C ~ 35°C)	20% of Hall sensor Rated current (peak value) Frequency: 50Hz ~ 1KHz	Working temperature: 0°C ~ 45°C Working temperature limit: -15°C ~ 55°C Humidity: 5% ~ 95%RH, non-condensing Storage temperature: -40°C ~ 70°C

Battery Cell Sensor

Battery Cell Sensor

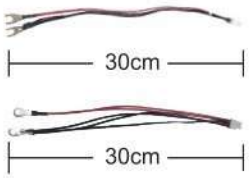
- Different battery coll sensors for, 2V, 6V, 12V, batteres
- Monitor individual battery voltage, internal temperature (negative pole), Impedance(ohmic value)
- Auto-balancing

Running status

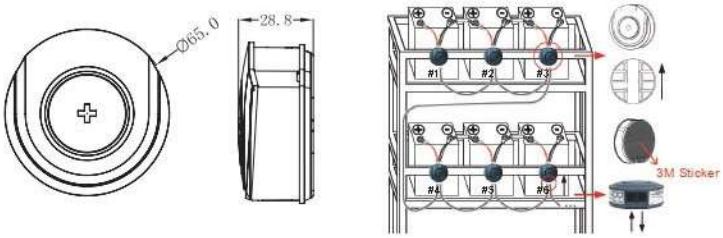
Abnormal status

Item	Rated input voltage	Measuring range			
		Voltage	Internal temperature	Impedance	Power consumption
Battery cell sensor	02V	1.6 ~ 2.6V (±0.2%)	-20°C ~ 85°C (±0.5%)	Range: 0.1mΩ~50mΩ Repeatability error: 1.0%±25μΩ Conformity error: 1.5%±25μΩ	Running: <110mW Sleeping: <12mW
	06V	4.8 ~ 10V (±0.2%)			Running: <90mW Sleeping: <10mW
	12V	7.5 ~ 15.6V (±0.2%)			Running: <90mW Sleeping: <10mW

➢ Dimension and Installation



Battery measuring cable	Item	Description
	Length	30cm
	Terminal & Size	U type, hole diameter: 8mm
		O type, hole diameter: 8mm



Extension Module (Optional)

➢ Ambient temperature & humidity sensor

- Dual RJ45 interface, fast wiring, support cascade use
- Adsorption by magnet
- Temperature: -20°C ~ 60°C (±0.4°C), resolution: 0.1°C. Humidity: 0 ~ 100%RH (±3%RH), resolution: 0.1%RH

➢ Hydrogen (H_2) sensor

- Class of protection: IP65
- Measuring range: 0 ~ 1000ppm
  Accuracy: ±5%FS
  Resolution: 1ppm
  (100KΩ ~ 50KΩ)

➢ DC insulation resistance sensor

- Measuring range: 1KΩ ~ 30MΩ
- Measurement accuracy: 10%
  (100KΩ ~ 50KΩ)

➢ 10.1-inch Android HMI

- touch-screen HMI for local display and operation
- OS: Android 10.0
- CPU: R818 (4-core A53 1.6GHz)
- Running memory: 1GB,
- EMMC: 8GB
- Support the reading and configuration of all parameters of the system

➢ String Voltage Measuring Sensor

- One can measure 1 string's voltage
- Measure battery string voltage and ripple voltage