

Smart Electric Safety Supervision And Power Management System

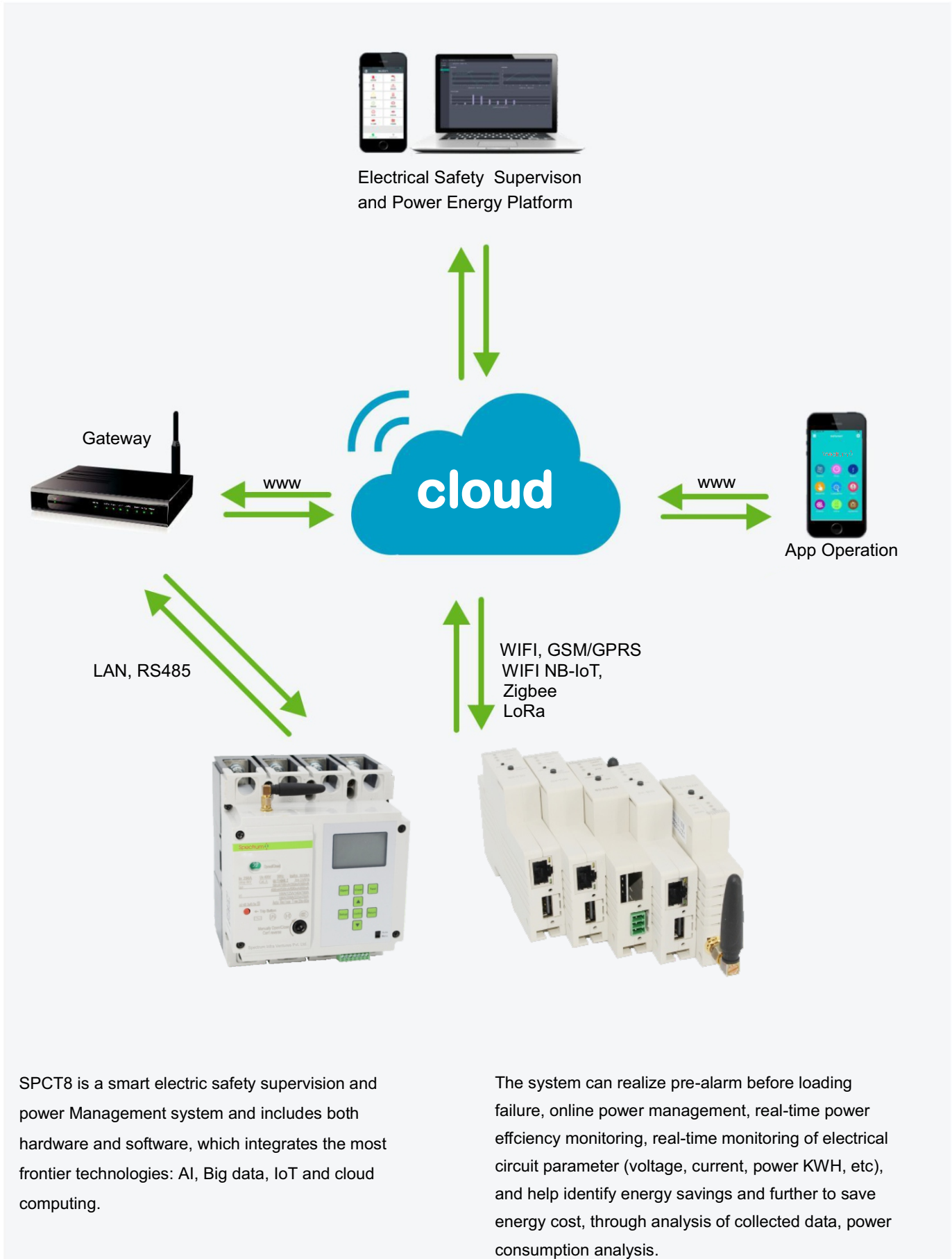
SPCT8



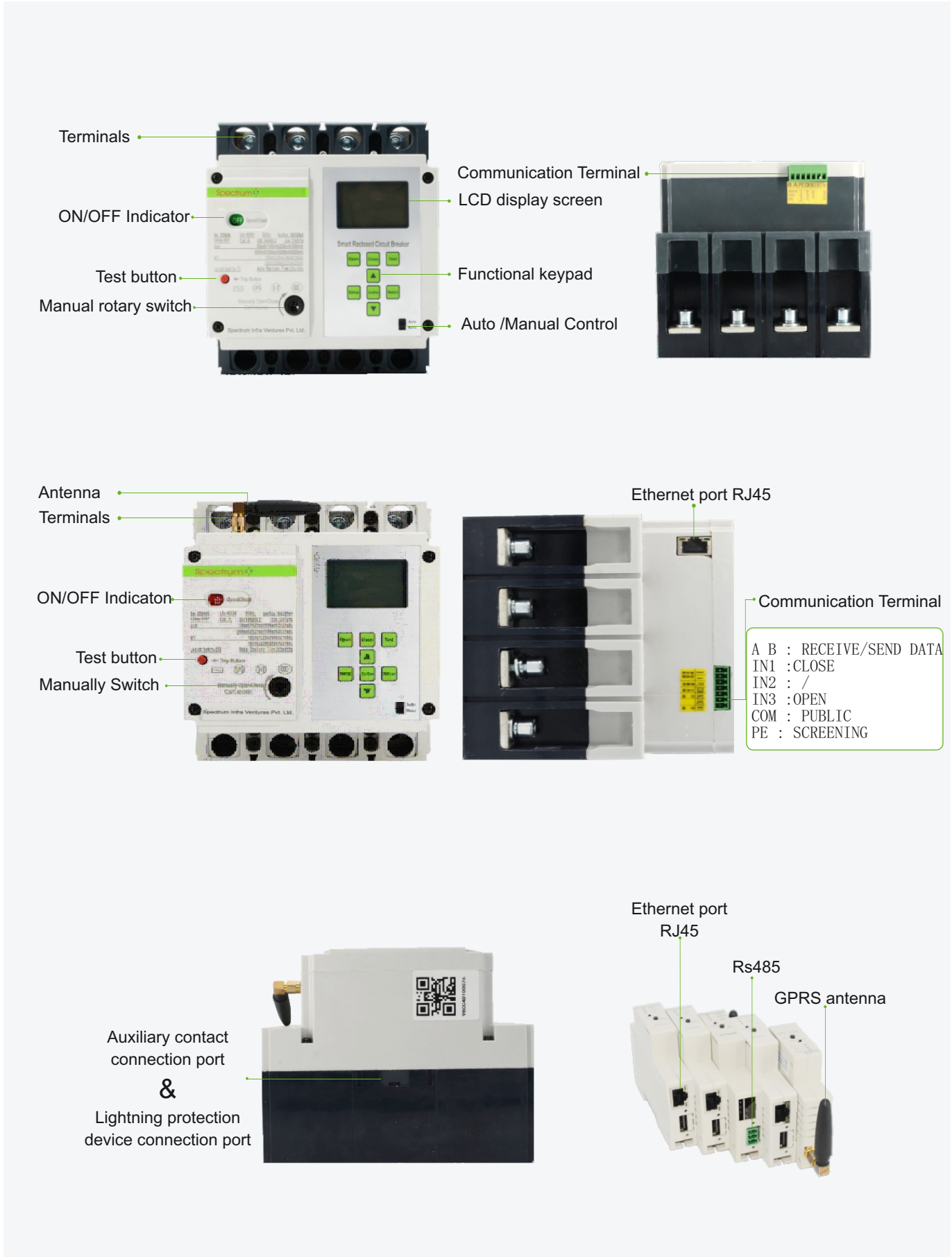
Focus on Smart Electricity

Smart Electric Safety Supervision and Power Management System

Overview



Structure



Smart Electric Safety Supervision and Power Management System

Features

Full Protection
This device includes full protections: Overload, Short Circuit, Earth Leakage, Over/Under Voltage, Phase Loss, unbalance, High Temperature

Electrical faults analysis
The device can realize real-time analysis, display of electrical faults and trip : Earth Leakage, overload, over voltage, undervoltage, phase loss, device locked. These electrical faults and trip information may be recorded in both device and platform.

Monitoring electrical circuit parameter in real-time
The device can make realize real-time monitoring of electrical circuit parameters: three phase voltage, earth leakage current, Current, Power, temperature.

Protection function and parameter setting
The over voltage, undervoltage, short circuit, unbalance, overload, tripping characteristic ,earth leakage current, time and other parameters can be set in the device. And the protection value also be adjustable in the device.

Auto recloser
The device is reclosed after an untimely tripping of the circuit breaker and the device will be blocked when the new fault happen again within 5 seconds after reclosing.

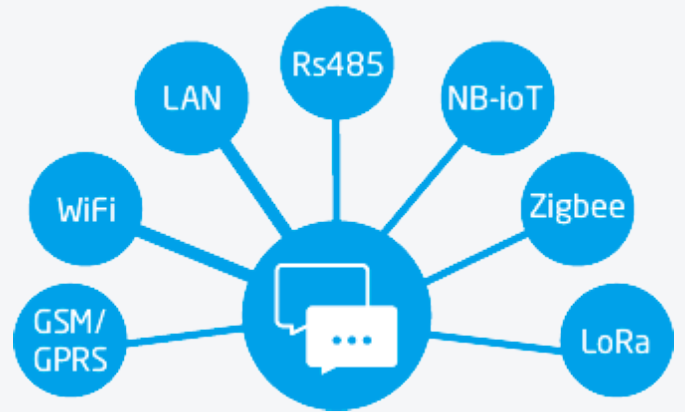
Events record and push
All the events may be recorded, stored, inquired in the device and platform

Big current
The rated current is up to 630A

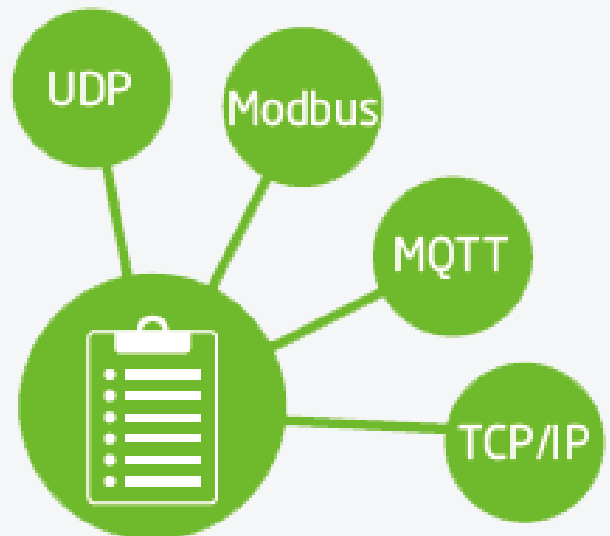
Man-machine interface
The device has big LCD display screen with man-machine interface, Main technical parameter can be showed and set in the LCD display screen easily.

Communication
RS485,Wifi,Ethernet port integrated in device of SPCT8-EL250 only. For models of SPCT8-EL125,400,630, they need add-on communication module of WiFi, TCP, GPRS 2G/4G, NB-IoT, LoRa, Zigbee for communication.

Add-on Surge protection module
Add-on Surge protection module is available



Communication

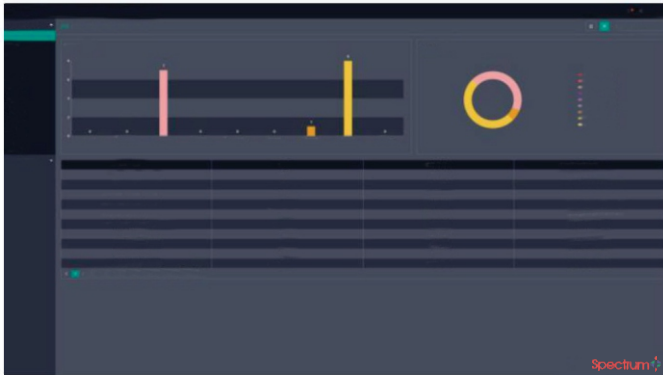


Protocols

Benefits



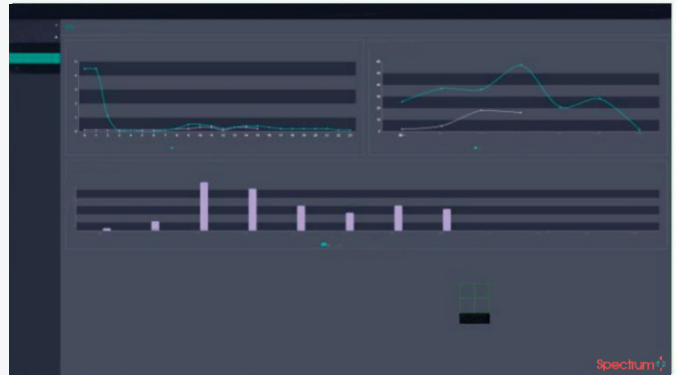
Electrical System Monitoring and Safety Supervision



The system can track and respond to power anomalies and gain valuable information about how the electrical distribution system delivers power to equipment and critical loads. Maintain easy control of electrical equipment while improving electrical system safety. With real time monitoring of electrical parameters, and robust alarm management features, The system help customers to attack potential problems before they become crises. Power monitoring and electrical system performance tracking helps to enhance system reliability.



Power management

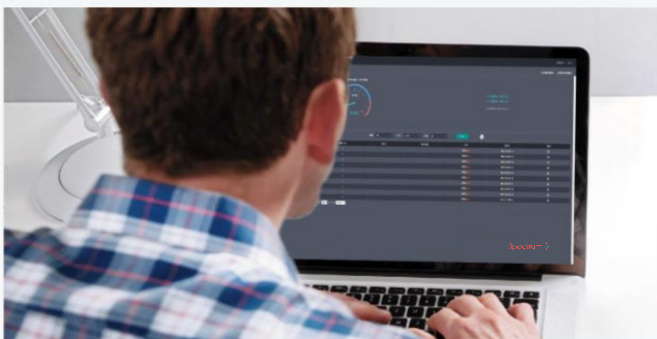


With energy data collection and visibility through easy-to-use dashboards and reports in APP and software platform, the system may help customers to improve energy efficiency and reduce energy costs. Manage, analyze and control the energy use.

- Monitor energy use and aggregate data from all energy assets
- Access real-time and historical data with easy-to-use analytics
- Energy cost allocation and billing
- Track energy performance
- Reduce peak demand and power factor penalties



Remote control



The hardware device may be controlled by App and software anytime and anywhere, to make life easier and safer.



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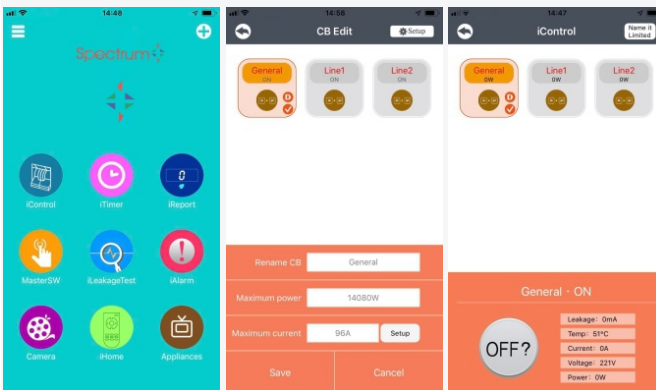
Software Introduction

The Spectrom smart electric safety supervision and power management system is an innovative cloud-computing platform designed to monitor, optimize and control the electrical system. This system also provides access to multisite level, simultaneously monitoring and comparing the performance of different of different facilities. It also can provide personal user profiles depending on the level of access they require. It mainly include App operation version in smart phone and software platform for Electric safety supervision and power management.

APP

It includes six functions:

Remote control, Real-time monitoring, Event alarm and push, Power consumption curve, Timer, Max. Power and Current setting, auto-test of Residual Current.



Remote control

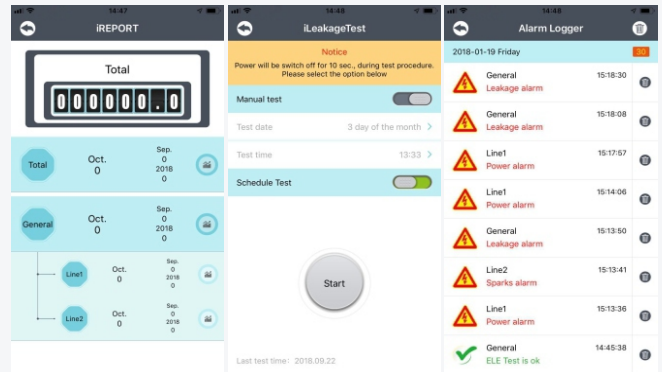
iMCCB can be operated individually or be switched on/off all together through App remotely. And for safety, it can not be switched on through APP after switching off manually.

Real-time monitoring

The system monitors electrical circuit parameters : voltage, current, Power ,temperature, Residual Current and KWH and these parameters may be showed in APP.

Max. Power and current setting

The max. power and current may be set through APP and the setting value must be lower than rated current and power.



Power consumption

Power consumption curve of main lines and each sublines may be showed in APP monthly and hourly.

Event alarm and push

All the events recorded and fault alarm will be pushed through App.

Auto-test of residual current

Auto-test of earth leakage current in fixed date each month in the App instead of manual test monthly

Timer

Users are able to remotely set the power demand they want to target with a weekly,daily or hourly resolution



Software Platform

The software platform includes two main parts: electrical safety supervision and power management.

Electrical Safety Supervision

The system will monitor all the electrical circuit parameter of all main and branch lines in real-time such as voltage, current, Power ,temperature, residual current and KWH and it may do pre-judgement and action through these electrical data collection and analysis.

Device location monitoring

After installation, the location information of each device will be recorded and showed in the map in software platform. The software platform may monitor the realtime status of all device installed all over the world, in case early warning or fault alarm happened, the supervisor may find the device and its location quickly, then solve it accordingly before any unforeseen event.

Information management

Through software platform, you can easily view contact information of technician of each project management site. If any warning and alarms happens, the software platform will inform the contact person to deal with it immediately.

Early warning and alarms

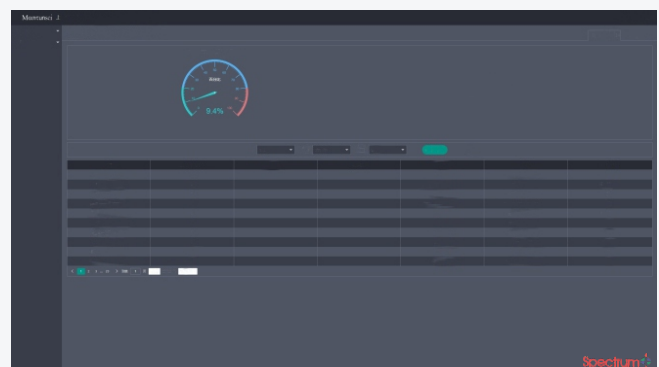
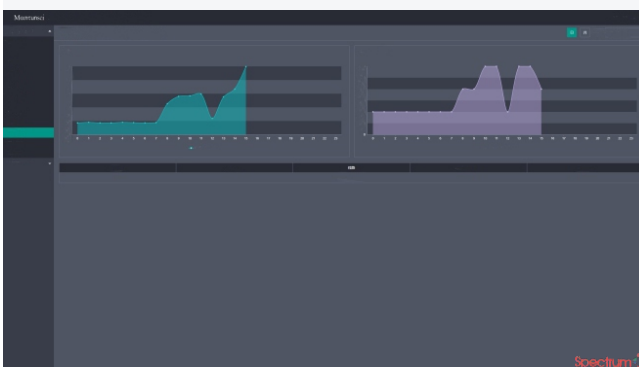
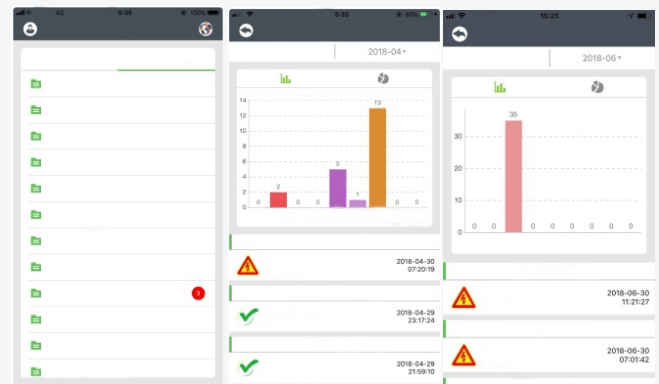
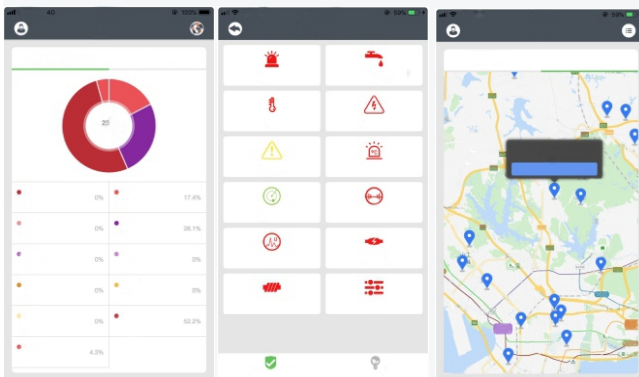
we can read the early warning and alarm information in software platform as follows:

- > Alarm of earth leakage current
- > Early warning of earth leakage current
- > Early warning of high temperature
- > Autotest function of earth leakage protection
- > Early warning and alarm of overload and over current
- > Early warning and alarm of over voltage and undervoltage
- > Alarm of short circuit
- > Alarm of unbalance
- > Alarm of electricity fraud

Electrical parameter monitoring

we can read the electrical parameter monitoring in software platform as follows:

- > Temperature monitoring
- > Current monitoring
- > Voltage monitoring
- > Power monitoring
- > Earth Leakage current monitoring



Smart Electric Safety Supervision and Power Management System

Software platform

Power Management

In this software platform, the user may find the basic analytic functions such as a dashboard data, instantaneous values, comparison functions and cost allocation by consumer group.

The building energy flows and costs are transparent, therefore, this solution is suitable for energy management and energy cost allocation application seeking energy efficiency improvement and cost reductions.

The platform realizes the collection, storage, management and efficient use of the terminal energy information. It analyzes, processes, handles all energy data, and output to keep the system run in best state, after system intelligent configuration.

In order to further provide conditions for mining, analyzing, processing and handling energy data, The energy efficiency management system we built, can not only effectively solve real-time energy balance and monitoring management, but also build up condition to further dig, analyze, process, handle data, through filing and management of a large amount of historical data.

Power consumption statistic, analysis and comparison

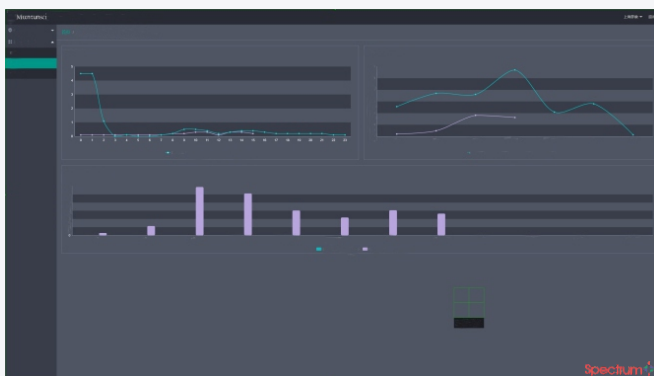
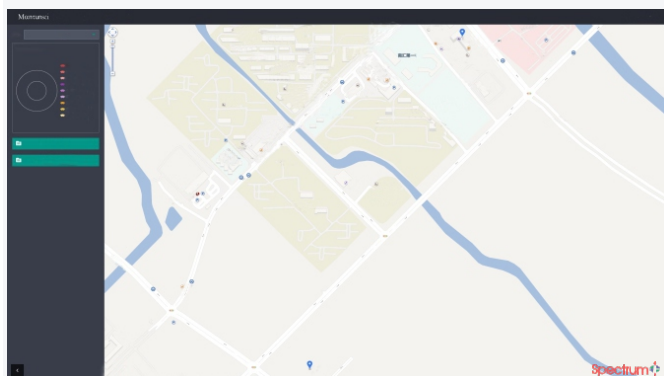
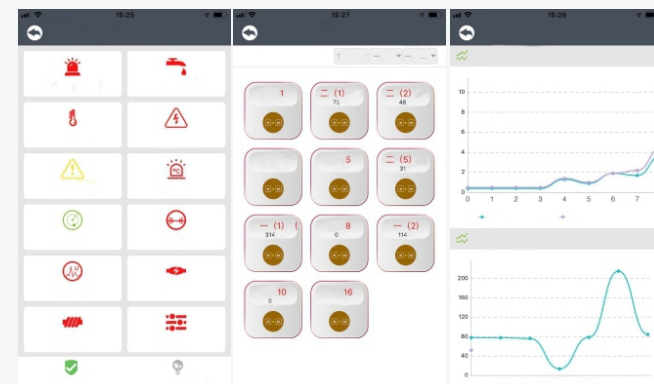
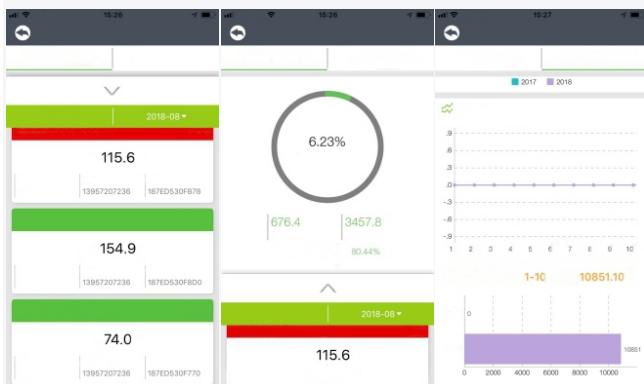
- > Power consumption comparison between current month and last month
- > Power consumption percentage of current month in the total amount of the whole year.
- > Power consumption statistic and sum of each classified divisions
- > Power consumption comparison monthly in last two years

Load statistic and comparison

- > Load status and comparison of today and yesterday
- > Load status and comparison of this week and last week
- > Load status and comparison of this year and last year

Control and Management

- > Rename of each device
- > Remote control
- > Scene setting with timer function
- > Password management



Applications

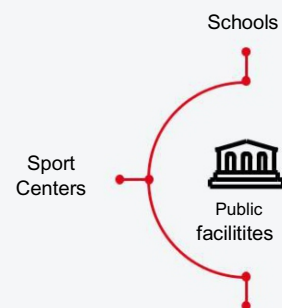
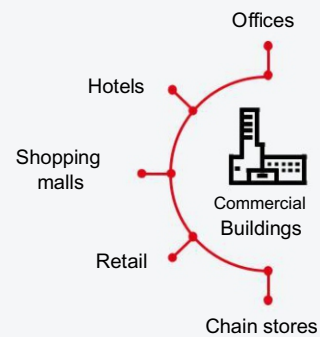
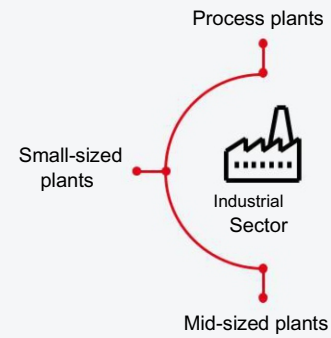
The device is based on a simple, integrated architecture. It guarantees high levels of flexibility, making it suitable for applications in different sectors.

In the industrial sector, solutions can be installed in small to mid-sized plants, in infrastructure facilities and process plants to monitor operations, using data analysis to minimize downtime.

Optimized management of assets creates a competitive advantage that enables customers to maximize business opportunities.

Commercial and public buildings can also leverage the scalable solution to achieve higher energy efficiency and to have more detailed monitoring and control of their facility. Offices, shopping malls, hotels, retail or chain stores can increase their awareness of energy consumption and cost allocation to improve performance.

Public facilities, such as schools, sport centers and healthcare facilities, can secure service continuity and develop predictive maintenance forecasts.



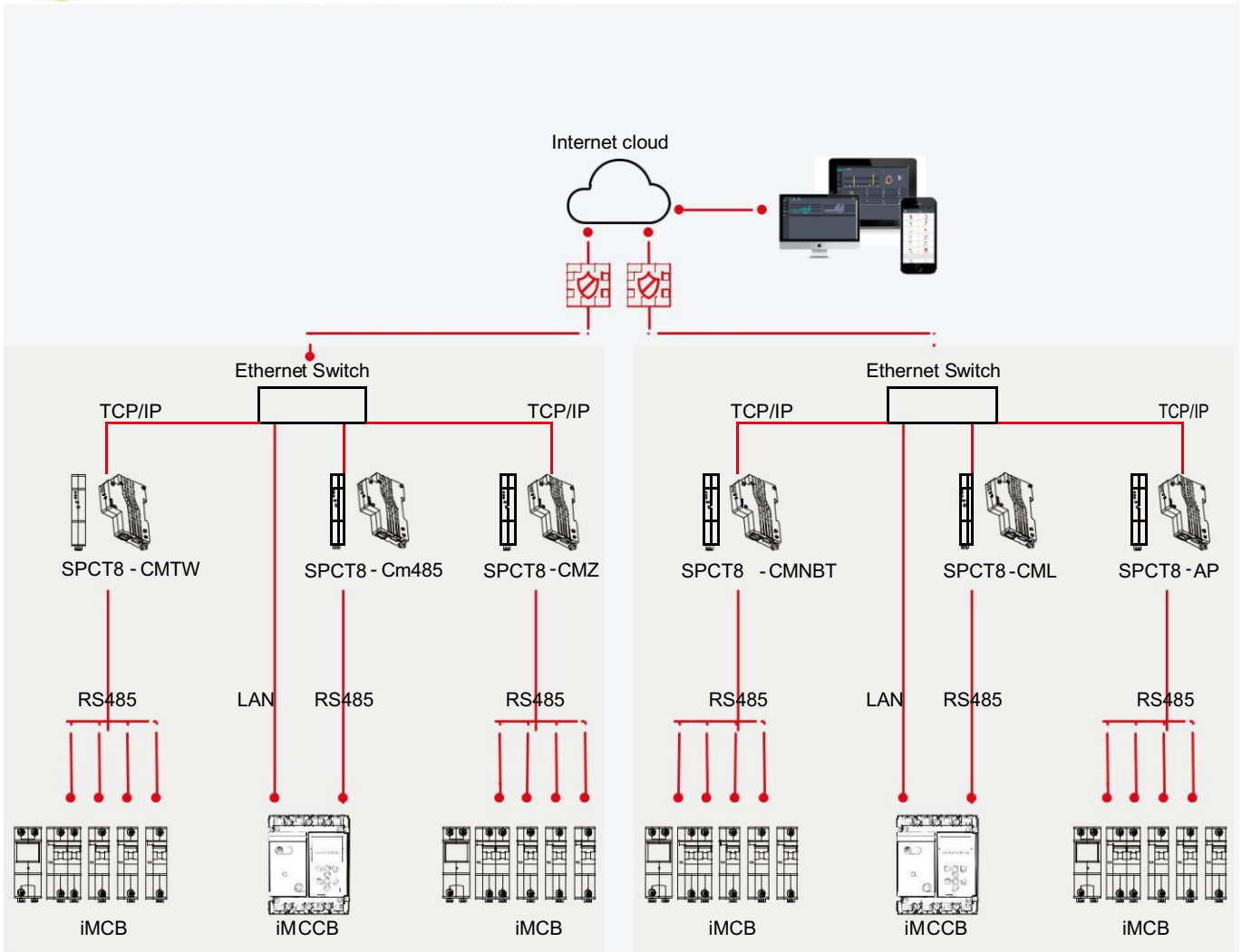
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Application examples

POWER INDUSTRY



月 96.69 kWh
日 11.46
851.50



Smart Electric Safety Supervision and Power Management System

Application Examples

This smart electrical safety supervision and power management system has changed the traditional operation and maintenance mode. By establishing an automatic monitoring and management platform, it is easier to use electrical safety supervision to eliminate potential safety hazards and achieve scientific energy management.



Hospital



The “Smart Electricity” APP helps hospitals to realize terminal power collection, store large amounts of data in real time, acquire first-hand data in real time, develop data center to extract, dig, analyze and summarize data, and finally provide proof for important decisions.

University



The “Smart Electricity” system can realize 7×24-hour school monitoring, get out of the limit and low efficiency of human work, and monitor the device operation status in real time through IoT system.

Shopping Mall



The mobile operation APP, with big data system, can digitally visualize all shop’s power consumption, to graphically show and monitor the electrical operation.

Bank







To realize the smart electrical management in bank, the system will activate alarm in time while there are potential hazard, such as abnormal lines or overload circuit. It will accurately report the fault cause, and timely check the safety hazards through technical means.

Smart Electric Safety Supervision and Power Management System


Technical specification of iMCCB

Smart Breakers are the core part of SPCT8 smart system, it combine protection, metering, monitor, timer, automation, event record and notice.


Item Code:		SPCT8-EL125	SPCT8-EL250	SPCT8-EL400	SPCT8-EL630
Picture					
Poles		3P+N			
Frame Current	A	125	250	400	630
Rated Current	A	40,50,63,80,100,125	100,125,140,160,180,200,225,250	200,225,250,315,350,400	400,500,630
Rated Voltage	Vac	400			
Insulation Voltage	Vac	800			
Frequency (HZ):	Hz	50/60			
Rated impuled withstand voltage, Uimp	Vac	8000			
Acing distance	MM	>50		>100	
Rated ultimate short-circuit breaking capacity, Icu	kA	>50		>65	
Rated operating short-circuit breaking capacity, Ics	kA	>35		>42	
Rated residual making and breaking capacity (IΔm)	kA	>12.5		>20	
Type (wave form of the earth leakage sensed)		AC			
Rated residual current (IΔn)	mA	50,100,200,400,600,800 , AUTO, OFF		100,200,300,500,800,1000 ,auto, OFF	
Breaking time under IΔn for Delay type	s	0.06/0.1/0.2 for option, 2 IΔn			
Breaking time	s	IΔn<=0.5,2 IΔn<=0.2;52 IΔn<=0.15			
Auto-recloser time	s	20-60			
Over voltage protection value	Vac	250-300(+/-5%)			
Under voltage protection value	Vac	150-200(+/-5%)			
Remote control delay time	ms	<=40ms			
Communication delay time	ms	<=200ms			
Protections		Overload, Short-Circuit, Earth Leakage, Auto-reclose, Phase Loss, Over voltage and Under voltage			
Monitoring of electrical circuit parameter		Current, Voltage, Power, Temperature, Freqeucy, Power factor			
Parameter value setting		Rated residual current value, Long-delay time for over load, Short-delay time for Short circuit, Instantaneous time for Short Circuit, Over voltage protection value, and Under voltage protection value.			
Electric Life	Times	1500	1000	1000	1000
Mechanical Life	Times	8500	7000	4000	4000
Connectivity		Rs485, infrared and Addedon communication of WIFI, TCP, GPS,NB-IoT, LoRa, Zigbee			
Software		Rs485, infrared, WIFI, TCP integrated inside. Added-on communication of WIFI, TCP, GPS,NB-IoT, LoRa, Zigbee			
Communication Protocol		App and software platform for option			
Pollution Degree		TCP, Modbus			
Ambient temperature:	°C	2			
Storage temperature:	°C	-15 - +40			
Humidity		-25---+70			
Altitude:	m	< 95%			
Connection		<=2000			
		From top to bottom			

Ordering information

For Smart power safety supervision and power management system with many different communication and APP& software platform

Pictures	Frame Current(A)	Phase	Rated current In (A)	Type Code
	125	3P+N	40	SPCT8-3P125L40G
			50	SPCT8-3P125L50G
			63	SPCT8-3P125L63G
			80	SPCT8-3P125L80G
			100	SPCT8-3P125L100G
			125	SPCT8-3P125L125G
	250		100	SPCT8-3P250L100G
			125	SPCT8-3P250L125G
			140	SPCT8-3P250L140G
			160	SPCT8-3P250L160G
			200	SPCT8-3P250L200G
			225	SPCT8-3P250L225G
	400		250	SPCT8-3P250L250G
			250	SPCT8-3P400L250G
			300	SPCT8-3P400L300G
			400	SPCT8-3P400L400G
	630		400	SPCT8-3P630L400G
			500	SPCT8-3P630L500G
630		SPCT8-3P630L630G		
630		SPCT8-3P630L630G		

Used as smart automatic reclosing device with RS485 and infrared communication

Pictures	Frame Current(A)	Phase	Rated current In (A)	Type Code
	125	3P+N	40	SPCT8-3P125L40R
			50	SPCT8-3P125L50R
			63	SPCT8-3P125L63R
			80	SPCT8-3P125L80R
			100	SPCT8-3P125L100R
			125	SPCT8-3P125L125R
	250		100	SPCT8-3P250L100R
			125	SPCT8-3P250L125R
			140	SPCT8-3P250L140R
			160	SPCT8-3P250L160R
			200	SPCT8-3P250L200R
			225	SPCT8-3P250L225R
	400		250	SPCT8-3P250L250R
			250	SPCT8-3P400L250R
			300	SPCT8-3P400L300R
			400	SPCT8-3P400L400R
	630		400	SPCT8-3P630L400R
			500	SPCT8-3P630L500R
630		SPCT8-3P630L630R		
630		SPCT8-3P630L630R		

Match of cross-sectional area and the rated current of connecting wire

Cross-sectional area with rated current not greater than 400A but matched with the connecting wire

Rated current (A)	16	20	25	32	40	50	63	80	100
Sectional area of wire (mm ²)	2.5	2.5	4.0	6.0	10	10	16	25	35
Rated current (A)	125	140	160	180	225	250	315	350	400
Sectional area of wire (mm ²)	50	50	70	95	95	120	185	185	240

Cross-sectional area with rated current greater than 400A but matched with the connecting wire


Rated current A	Cable		Copper bar	
	Cross-sectional area m ²	Quantity	Dimension mmxmm	Quantity
500	150	2	30*5	2
630	185	2	40*5	2





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