



Acrel-5000 Energy Consumption Online Monitoring System

Author: Aaron E-mail: aaron@acrel.cn Web: www.acrel-electric.ke

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PART ONE Overview

IN TRADUCTOR

Overview



Acrel-5000 energy consumption online monitoring system realizes real-time online monitoring, visualized management and statistical analysis of building energy efficiency by installing energy metering devices such as power meters, water meters, gas meters and other meters in the building, adopting remote transmission and other means of real-time collection of energy consumption data, dynamically displaying the level of energy consumption in the building and the trends in energy consumption, which guarantees reliable, safe, economical and efficient use of energy in the building.



PART TWO

Energy Consumption

Classification



Energy Consumption Classification





PART THREE

System Structure

System Structure





PART FOUR

System Function





Mo	Cockpit ManualInput - Energyflow Chart -	LineLose × • Energy Collect × We	Ancienty A							
admin	Company Group	Start Time 2023-07-17	00 × h 00 × min End Time 2023-07-17 10	0 ∨ h 35 ∨ min O Search + Export	Unit: KW-I					
ergyflow Chart	平台机构									
inualInput	Energy	Circuit Name	Starting Value	Ending Value	D-value					
ergy Fee	4 ~	主进线	6236658.00	6238804.00	2146.00					
rameter	Station name	地源热泵空调总表	3987931.25	3989508.75	1577.50					
am History	比麼手信題	电容柜	45825.44	45830.00	4.56					
0	Enter keywords for filtering	新增分立柜总表	2417796.00	2418302.50	506.50					
ат кероп	Cascade Selection Select All	一层北	689692.13	690137.88	245.75					
isumeElectric	· 2 主进线	一层南	61475.52	61478.46	2.94					
ergy Collect	☑ 电容柜	二层北	191799.55	191817.34	17.79					
rkEnergy	 新增分立柜总表	三层北	277110.94	277166.56	55.62					
eLose	☑ 一层南1APE2右一层北1APE1左	三层南	210363.67	210404.14	40.47					
erPriseLevelEnergyl	✓ 生活水泵2路—层弱电房 ✓ 消防喷沸机械泵1	四层北	103111.03	103131.34	20.31					
porateIncoming	☑ 消防喷淋机械泵4	五层北	160943.53	160969.11	25.58					
fuction ineMainten	 ✓ 空噴用电 ✓ 光伏井网 	二层南	162253.23	162267.44	14.21					
out on the second second	✓ APF电能质量柜数据模块1	六层 北	89566.15	89587.17	21.02					
ConsumptionRepor		四层南	102313.77	102336.57	22.80					
iualEntry		五层南	64027.53	64035.06	7.53					
pay System 🗸		六层南	352632.00	352694.47	62.47					
istrial Energy			107/02 47	107405 75	2.20					

Real-time Monitoring

Real-time monitoring of various energy consumption data, providing functions such as historical parameter query and reading energy consumption datasets reading;

Energy Consumption Statistics

Perform hourly, daily, monthly, and yearly statistics on various types of energy consumption data, and provide statistical functions such as energy consumption per unit area, energy consumption per unit air-conditioning area, and per capita energy consumption. The statistical results can be displayed in the form of curves, bar charts, pie charts, and other graphical or report forms, and export and print functions are provided;





Cockpi	it ManualInput - Energyflow Chart - LineLose	Energy Collect × WorkEner	gy × CorporateIncoming × Ener	rgyStatistics × EnergyOv	erview × EnergyGroupReport ×	Distribution × MOM Analysis ×	YOY Analysis × Alarm Infomation × • Alarm An
admin 🖉	Number Of Alarms 721 0	Chain Ratio +59.16%	Monther Of Alarms In His Month 15919	Number Of Alarms In Last Month 29680	Chain Ratio +2.81%	Vr Number Of Alarms In This Year 149843	Number Of Alarms In Last Year Chain Ratio 84843 +194.16%
🥶 Device Monitor 👻 Static	n Alarm Ranking Station Alarm Distribution				Station Alarm Ranking	List Station Alarm Ranking 0	chart 2023-07-17
♦ Intelligent Light × Date	- = 2023-07-01 - = 2023-07-17	Search 0				Alarm Type	Number of Alarms
DJ Charging pile ~	Substation	Alarm Handling Rate ≑	Number of Alarms 🗢		1	通讯状态	643
Air Conditioning ~ 1	妈海化学楼屋面分布式光伏发电	43%	6169	<u>ن</u>	2	现场报警	78
EnvironmentMoniter	妈清仓库楼屋面分布式光伏发电	- 11.3%	2541	쓻	3	工作通知	0
Equipment Archives 3	江苏安科瑞电器制造有限公司配电站	46.1%	1012	읊	4	设备故障	0
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🖆 Alarm 🕎 5	SUNWELL光伏电站		543	<u>ه</u>			
Signal Event 6	E楼宇信息		538	÷	377 (A 173 407 96% A73 L		2000 07
OverLimit Event 7	光纤测温	0%	510	÷	十百月秋日96日		2025-07
Alarm Infomation 8	江苏安科珈电闢制造有限公司光伏电站	36.6%	339	읊	1,800		
Voice Announcements g	华能汝阳清洁能源有限公司分布式光伏电站	22.8%	285	<u>ل</u>	1,500	-	
Alarm Analysis 10	河北沃邦电力科技有限公司		273	<u>ل</u>	1,200	11.	
SMS Log 11	妈達西部楼屋面分布式光伏发电	35.4%	257	<u>ل</u>	900		
alarmSystem 12	TMSandEMS	31.2%	250	<u>ه</u>	300		
Industrial Energy 13	豊富地学会学校教育社会	Total 66 20/page	246		0 01 02 03	04 05 06 07 08 09	10 11 12 13 14 15 16 17

Energy Consumption Analysis

Statistics of energy consumption data according to time, area, equipment, energy consumption category and other dimensions, combined with year-on-year analysis, month-on-month analysis, day/night energy consumption analysis, workday / holiday energy consumption analysis and other means of analysis, to assist users in tapping energy saving potential;

Energy Consumption Alarm

Real-time monitoring of energy consumption of a certain equipment or area, alarming abnormal energy consumption according to preset alarm conditions, alarm information can be timely pushed to the administrator through SMS, E-mail or mobile client software (APP);





	Energyflow Chart ×	LineLose ×	Energy Coller	zt × Works	nergy ×	CorporateIncom	ing × • E	nergyStatistics	EnergyO	veniew ×	EnergyGroup	Report × C	listribution ×	MOM Analys	iis × YOY	Analysis ×	Alarm Informat	.on ×
min Company Group		Daily R	eport Mc	inthly Report	Annua	al Report												
cal Safety ~ 平台机构	平台机构		2023-07-17	0	V Bt-	11 V B†	< Last	day 1	lext day >	O Se	arch	Chart	* Exp	ort (*for	incoming cire	cuit)		
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nalysis へ			"主进线	178	120.15	168	113.40	164	110.70	164	110.70	156	105.30	156	105.30	176	118.80	200
erview Enter keywords f	or filtering		*地源	124.75	84.21	115.25	77.79	115.25	77.79	112	75.60	105.5	71.21	104	70.20	132.75	89.61	155.2
Cascade Selectio	n 🔽 Select All		电容柜	0.32	0.22	0.32	0.22	0.32	0.22	0.32	0.22	0.32	0.22	0.24	0.16	0.48	0.32	0.56
- ☑ 主进线			新增分	46.25	31.22	45.75	30.88	45.75	30.88	46.25	31.22	45	30.38	47.25	31.89	37	24.98	37.75
oupReport / 地源热泵空调	总表		一层北	22.63	15.28	22.76	15.36	22.63	15.28	22.45	15.15	22.51	15.19	22.38	15.11	22.5	15.19	22.7
andard · · · · · · · · · · · · · · · · · · ·	表		*一层南	0.09	0.06	0.1	0.07	0.09	0.06	0.09	0.06	0.06	0.04	0.09	0.06	0.09	0.06	0.13
ysis // 消防性机械等	2館1		二层北	1.09	0.74	1.05	0.71	1.09	0.74	1.02	0.69	1.24	0.84	1.09	0.74	1.03	0.70	1.13
☑ 一层南1APE2	右一层北1APE1左			0.59	4.74	0.50	1.74	0.67	4.70	26	1.75	2.54	1.74	0.50	4.75	2.05	1.00	1.05
小SIS	源1		=100 ×10	2.03		2.00	1.7.4	2.07	1.70	2.0	1.70	2.04		2.03	1.75	2.50	1.55	4.00
w Chart 🔽 消防喷沸机机	原4		三层南	1.48	1.00	1.46	0.99	1.49	1.01	2.35	1.59	1.35	0.91	1.41	0.95	1.43	0.97	1.56
out 空调用电			四层北	1.32	0.89	1.14	0.77	1.11	0.75	1.14	0.77	1.19	0.80	1.17	0.79	1.14	0.77	1.5
 ✓ 元伏升网 ✓ APF电能质量 	巨数据模块1		五层北	1.08	0.73	1.09	0.74	1.12	0.76	1.15	0.78	1.12	0.76	1.09	0.74	1.15	0.78	1.92
			"二层南	2.27	1.53	2.03	1.37	2.15	1.45	2.13	1.44	2.02	1.36	1.38	0.93	0.19	0.13	0.21
u -			六层北	1.61	1.09	1.59	1.07	1.52	1.03	1.61	1.09	1.57	1.05	1.57	1.06	1.48	1.00	2.35
story																		
			E-348 MM															

Manual Input

Provide manual input function for energy consumption data that does not facilitate automatic collection;

Energy Billing

Provide statistical reports on energy costs, support the statistics of electricity cost according to unitary electricity price or multiple rates;



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	Cockpit Manual	Input × • Energyflow Chart >										
admin	Company Group	平台机构	Beginning date	2023-07-01	Endding date	2023	-07-17	Q Search				
🛓 Electrical Safety 🗸	能源流向图											
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Energyflow Chart												
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Energy Flow Diagram

Visually display the classification, composition, and proportion of energy consumption in the form of a Sankey diagram, reflecting the balance relationship between energy input and distribution and transportation;

Renewable Energy Statistics

Statistics on the power generation of renewable energy such as distributed photovoltaics and wind power;





FMS能效管理平 2, Company Group Paramete 主进线 2412 10150.13 -7738.13 -320.82% 地源热泵空调总列 由容相 5.2 新增分立柜总表 546.25 578.49 -32.24 -5.90% Energy Colle 269.54 一层北 WorkEnergy 一层南 3.56 二层北 21.84 三层北 66.81 三层南 47.68 四层北 24.08 五层北 31.72 二层南 14.67 六层北 23.74 Prepay System 四层南 五层南 8.07 Pevice Monito 六层南 62.8 Intelligent Ligh 一层研发室 3.98 Charging pil 二层北-AEW 0

Carbon Emission Monitoring

Statistics on the carbon emissions generated by systems such as HVAC, domestic hot water, lighting, and elevators during the operational phase of buildings;

Data Review

Review the collected data, review whether the data itself or changes in the data are in line with reality, and ensure that the increase/decrease, and high/low changes in the data are within a reasonable range and are logical;

PART FIVE

System Features

STATES OF THE OWNER OWNER

System Features





Easy Access

Browser and mobile APP access;

Convenient Networking

Supports wired and Lora wireless data collection, supports Ethernet wired upload, 4G wireless upload;

Fully Compatible

The collector also provides RS-485, M-bus, and Ethernet interfaces, supporting the collection of data from various water, electricity, gas, and cold (heat) meters through protocols such as Modbus, DL/T 645, CJ/T 188, Q/GDW 376.1, DL/T698.45, etc;

Safe and Reliable

Energy consumption data is encrypted during transmission in case of network failure, the data can be saved in the on-site intelligent gateway, and the data can be transmitted after network recovery;

PART SIX

Typical Hardware

Typical Hardware

ANet Series Smart Gateway



Typical Hardware





Data Collection

Support Modbus-Rtu、Modbus-TCP、 IEC 103、IEC 104、CJ/T 188、OPC UA、BACNet IP protocols;



Data Storage

Maximum support for 32G data storage;



Data Transmission

Support Modbus-TCP、IEC 104、 MQTT、HTTP、XML/JSON protocols;



Remote Management

- Remote configuration;
- On-line monitoring;



Data Processing

- Hierarchical alarms;
- Data encryption;
- Data compression;
- Mathematical operation;
- Logical operation;



Hardware Performance

- ARM processor;
- Embedded Linux operation system;
- Support up to 16 RS-485;
- Support up to 2 network ports;
- Support Lora wireless interface;
- Support 4G;

PART SEVEN

Typical Cases

Typical Cases















DENSO



Sumitomo



BBRAUNSHARP

FATON

Panasonic



THANK YOU