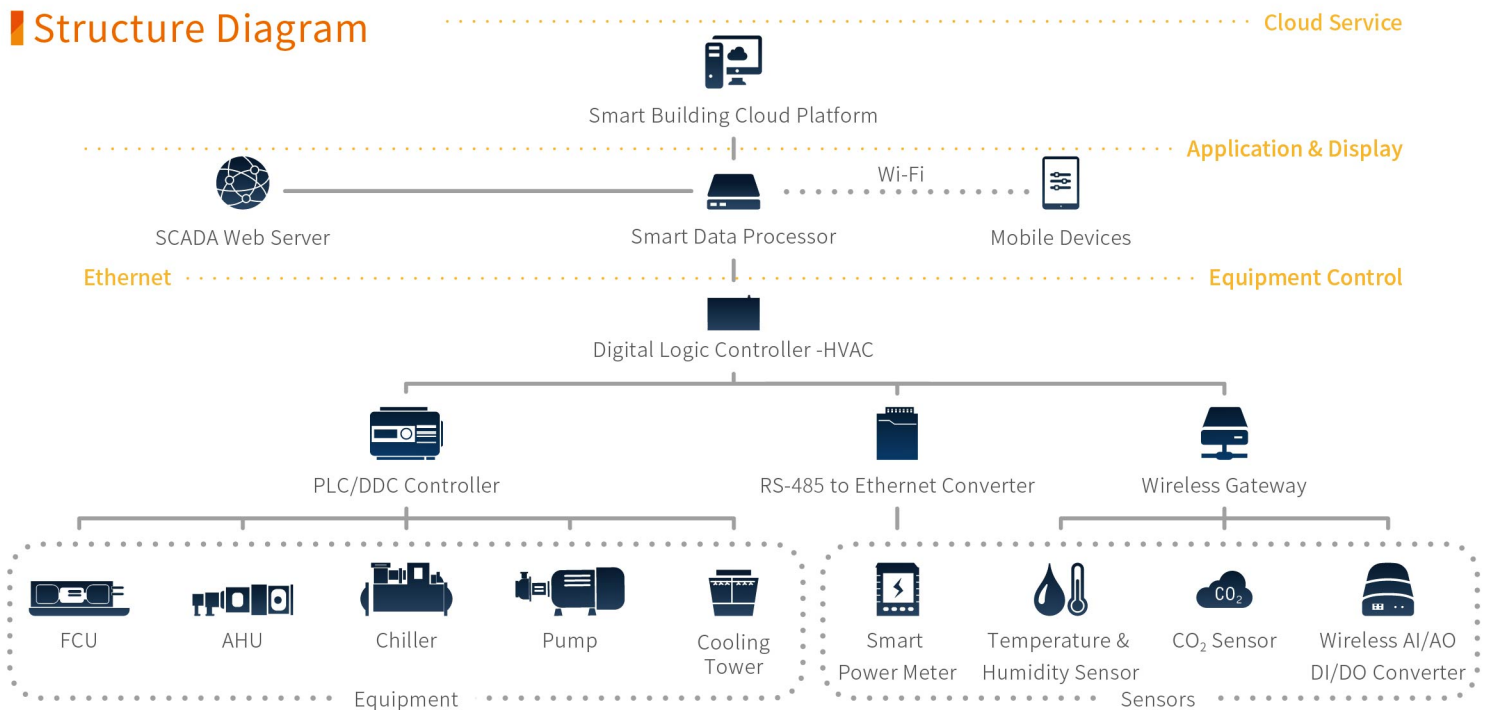


Completely collect the environment information and the operation data of the HVAC equipment to optimize the logic control through our algorithm to achieve the optimal HVAC optimization system combining comfort and energy efficiency.

Smart HVAC Optimization System

Structure Diagram



System Features



Operation Indicator Tool

To show the indoor air quality indicators and keep the optimal environment comfort, the system adapting wireless communication technology, uses sensors to collect data for temperature, humidity, CO₂ level and equipment power usage for live display.



Demand Operation Control

Can define a power unload strategy based on contract capacity, and further provide demand trend forecast and multi-stage active adjustment settings.



Energy Efficiency Decline Alarm

The system can continuously track status of equipment efficiency, provide the efficiency decline alarm for chillers and other devices, and further inform management team to arrange maintenance in advance.



Simulation Prediction Tool

Instantly collect weather and cooling load demand info to predict trends. The system actively and dynamically adjusts operation settings of each device based on demands, simulates the total energy usage, and matches the demand management simultaneously.








Optimal Operation Strategy

Dynamic optimization and adjustment of equipment operating parameters for indoor air side and water side to achieve the full HVAC system energy saving control.

System Functions

Device	Function	Hardware Requirement	Benefits
Full System	Device	Cooling load dynamic prediction	T/RH Sensor/CO ₂ Sensor DDC/IWA KIT Ice Storage Tank Level Gauge People Counting System
		HVAC power consumption dynamic prediction	Main devices power consumption sensing Cooling Load Dynamic Prediction System
		Demand operation control	DDC/IWA KIT Cooling Load Dynamic Prediction System
		Sensing components value comparison	DDC/IWA KIT (Digital Logic Controller) Air & Water Side Sensing Components
Air Side	AHU/PAH	Environment optimal comfort control	Network Thermostat Indoor T/RH Sensor
		People sensing linking control	Network Thermostat People Sensing System
		Outside air optimization control	T/RH Sensor/CO ₂ Sensor PM2.5 Sensor Network Thermostat
		Air volume optimization control	Indoor T/RH Sensor DDC/IWA KIT Inverter
		Operation and maintenance alarm	Chilled water temperature sensing Coil pressure difference sensing Supply/Return air temperature & humidity sensing Operating power measurement
Water Side	Chiller	Chilled water effluent temperature optimization control	Indoor T/RH Sensor Remote chilled water supply temperature setting
		Optimal operation combination control	Remote on/off setting In and out water temperature sensing (chilled water & cooling water) Operating flow sensing Operating power measurement
		Operation & Maintenance alarm	Refrigerant side pressure sensing Chiller water & cooling water temperature sensing Operating flow sensing (chilled water & cooling water) Operating power measurement
	Cooling Tower	Cooling water effluent temperature optimization control	Outdoor T/RH Sensor Cooling water temperature sensing DDC/IWA KIT(Digital Logic Controller) Inverter
		Operation & Maintenance alarm	Outdoor T/RH Sensor Cooling water temperature sensing Inverter Operating power measurement

Product Specifications

 <p>Digital Logic Controller- HVAC</p> <p>Dimension (L x W x H) 168×107×65 mm</p> <p>Power requirement 5V~24V DC</p> <p>Memory 2GB PRDDR4</p> <p>Core processor NXP I.MX8M Series</p> <p>Video output HDMI</p> <p>Communication interface USB 2.0 x 2 Mini PCIe card</p> <p>Protocol RJ-45 x 2, 10 / 100 / 1000 Mbps Ethernet 802.11 AC WLAN BT communication</p>	 <p>Wireless Gateway</p> <p>Dimension (L x W x H) 85×85×25 mm</p> <p>Power requirement DC 24V / PoE</p> <p>Protocol IEEE 802.15.4 Wi-Fi Ethernet</p>	 <p>Smart Power Meter</p> <p>Dimension (L x W x H) 110×83×52 mm</p> <p>Power requirement AC 80-264V</p> <p>Network communication RS-485 Ethernet</p> <p>Input voltage Phase voltage 80-350 VAC Line voltage 140-600 VAC</p> <p>Input current EMA101 5A(Measurement ratio can be set)</p> <p>Input current EMV101 CTΦ10mm (60A) CTΦ16mm (100A) CTΦ24mm (200A) CTΦ36mm (300A) CTΦ36mm (400A)</p>	 <p>Wireless 3 in 1 Sensor</p> <p>Dimension (L x W x H) 56×56×12.5 mm</p> <p>Power requirement DC 24V 5V mini USB</p> <p>Protocol IEEE 802.15.4 Mesh Network</p> <p>Temperature 0-50 °C</p> <p>Humidity 1-99%RH</p> <p>CO₂ concentration 0-2,000ppm</p>	 <p>Wireless AI/AO Converter</p> <p>Dimension (L x W x H) 180×77×30 mm</p> <p>Protocol IEEE 802.15.4</p> <p>Power requirement AC 100 - 240V DC 12V / 24V</p> <p>Specification 4AO+4AI AO: 10V PWM / 0-10V / 0-20mA AI: 0-10V / 0-20mA</p>
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The appearance of the product may be subject to slightly change.