

H C E C E



杭州华辰电力控制工程有限公司
Hangzhou Huachen Electric Power Control Co., Ltd.

Contents

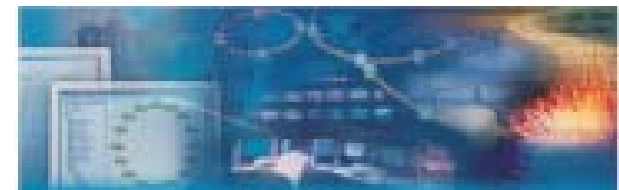
- Introduction
- Qualification Documents
- Applicable Solutions: Automation in Hydro-engineering Fields
- Applicable Solutions: Automation in Water Treatment Fields
- Applicable Solutions: Automation in Navigation Fields
- Applicable Solutions: Automation in Electric Power Fields
- Product Agency
- Engineering Service System
- Quality Assurance System

Introduction

Hangzhou Huachen Electric Power Control Co., Ltd. (HCECE) was independently registered and established in March 1999 at the state-level Hangzhou High-Tech Industry Development Zone. It is an independent legal entity and has been awarded as Hi-Tech enterprise by competent government authorities.

HCECE is mainly engaged in EPC-based contracting for E&M equipment of Hydropower stations. As well as in design, software development and System Integration for SCADA system, relay protection system, industrial TV system, online equipment test/measuring system of Hydropower stations, hydro- engineering complexes, Pumping Stations, Ship locks and substations, etc.

HCECE is a first-rank VAR (Value Added Reseller) in China of GE Multilin and ITI Products and Services (Digital Energy Group). We sell and provide Value Added service for clients on the product line of GE Multilin microcomputer-based relay protection devices, GE Multilink industrial-class ethernet Switches, Multi-functional electric meter, ATS, etc.



Introduction

Taking the full advantages of a design and research institute in technical innovation and new technology application, HCECE is active in R&D of new products in the automatic controlling field. The company has accumulated a great wealth of valuable experience through engineering practice at large-sized hydropower and hydro-engineering projects. In combination of the SCADA development trend with the self-developed core technologies, HCECE has created a unique comprehensive automation system which integrates the monitoring, control, relay protection and measurement for hydropower stations, hydro-engineering complexes, pump stations, ship locks and substations, etc. The system represents in all aspects the orientation in computerized control engineering in the world, and is good in quality, reliable in techniques and high in performance/cost ratio.

HCECE has a talent pool of outstanding professionals in the Chinese automatic control field, adopts the advanced control technologies and hi-performance products in the world, and devotes itself to provision of advanced automatic control system solutions to the projects in hydro-engineering, power, petrochemical, chemical, water transportation, water treatment, ship building fields, etc., as well as the all-position service including pre-sale, after-sale, training, system integration and debugging services, etc.



Qualification Documents



工商营业执照

- Business License



高新技术企业认定证书

- Verification Certificate of Hi-Tech Enterprise



GE增值分销商授权书

- Authorization of Value-Added Reseller for GE Multilin



荣誉证书

- Honorable Certificate



变电站综合自动化软件著作权证书

- Copyright Certificate for Substation Automation Software



电站监控软件著作权证书

- Copyright Certificate for Power Station Monitoring and Control Software

Qualification Documents



ISO管理体系认证证书

- ISO Management System Verification Certificate

- CE certification



CE认证证书



3A信用证明等级证书

- AAA Certificate of Credit Grade

- Authorized Distributor Certificate from GE



GE特约经销商证书

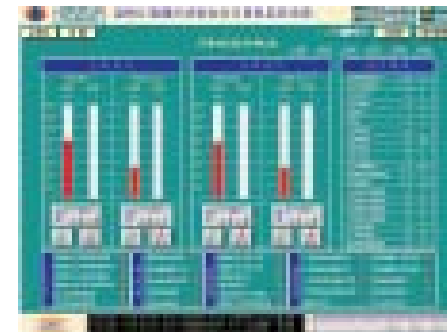
Applicable Solutions:

Automation in Hydro-engineering Fields

Computerized monitoring and control system for power stations

The SCADA System of HC2000 Series for hydropower stations is a successful automation system product developed by HCECE by absorbing and based on the hardware and software platforms of world class brands such as GE, Schneider, Siemens and Allen-Bradley(Rockwell), etc.

This system embodies the autocontrol, network communication and Microcomputer-based protection technologies, and consists of Generator Unit control unit, auxiliary equipment control unit, upper-level control unit and network equipment, etc. By offering the functions of automatic control, safe operation and intellectual management, the system renders an economic, reliable, practical and all-round solution for realizing “No-Attendant” or “Less-Attendant” operation of a power station. The system can be built as single-net, dual-net or Ring-net structure by Applications and user requirements.



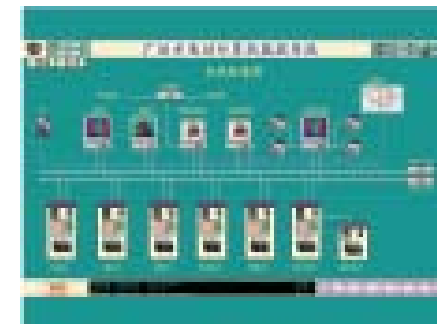
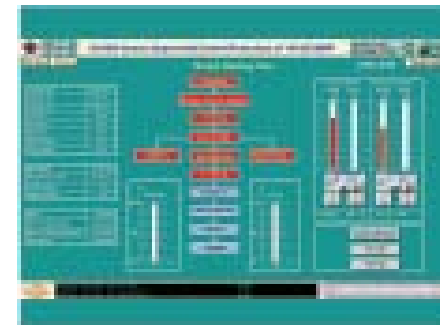
Applicable Solutions:

Automation in Hydro-engineering Fields

Computerized monitoring and control system for power stations

Main Functions

- Data sampling and processing
- Safe operation monitoring and event alarm
- Control and regulation operation
- Auto-generating control
- Auto-voltage control
- Comprehensive computation and statistic analysis
- Man-Machine communication
- Production management and statistic recording
- Operation diary and report printing
- System communication
- Database management
- System self-diagnosis and redundancy switchover
- System clock synchronization
- Training simulation
- Remote diagnosis



Applicable Solutions:

Automation in Hydro-engineering Fields

Computerized monitoring and control system for power stations

Main Engineering Records

- SCADA and PC-protection System for Quang Tri Hydropower Station in Vietnam
- PC-protection System for SONG TRANH Hydropower Station in Vietnam
- SCADA, unit protection, low-pressure and technical water supply system for Yavuz Hydropower Station in Turkey
- SCADA, unit protection, low-pressure and technical water supply system for Yagmur Hydropower Station in Turkey
- SCADA and unit protection system for Midillin Hydropower Station in Turkey
- SCADA and unit protection system for DIM Hydropower Station in Turkey
- SCADA and unit protection system for Ayancik Hydropower Station in Turkey
- SCADA and unit protection system for Guzelcay I Hydropower Station in Turkey
- SCADA and unit protection system for Guzelcay II Hydropower Station in Turkey
- Protection system of 2x390MW GE generator-transformer bank for gas-generating unit (LNG) Guangzhou Zhujiang Thermal Power Plant



Applicable Solutions:

Automation in Hydro-engineering Fields

Computerized monitoring and control system for power stations

Main Engineering Records

- Comprehensive automatic system of Tonglu Tianzi' ao Power Plant
- SCADA and unit protection system for Ling' an Qingshan Hydropower Station
- SCADA system for Ningbo Baixi Hydropower Station
- SCADA system for Ningbo Xixi Hydropower Station
- SCADA system and auxiliary apparatus for Ningbo Zhougongzai Hydropower Station
- SCADA and relay protection system for new-type generator/motor of Pilot Jiangxia Tidal Power Plant
- SCADA and secondary-circuit protection system for Rui' an Gaohu Hydropower Station
- SCADA and PC protection system for Wenzhou Beixi II Hydropower Station
- SCADA system for Fujian Yinhe Hydropower Station
- SCADA and PC protection system for Anhui Yanjia Hydropower Station
- SCADA and PC protection system for Yuexi Tianmaqiao Hydropower Station
- SCADA and PC protection system for Hongjiang Yulongyan Hydropower Station



Applicable Solutions:

Automation in Hydro-engineering Fields

SCADA system for pump stations

The HC2000B-series SCADA systems for pump stations adopt the worldwide-applied industrial-control computers as hardware platform and operate with various versions of multi-task Microsoft windows operation system. The advance configurational software in the industrial autocontrol field, GE CIMPLICITY HMI, is used for secondary development, and the application software is aiming at the operation of the pump stations, offering the user tools simply and quickly generated in the integration environment for configuring the control system, so as to realize the site debugging and maintenance. The system has quite a few of amiable Man-Machine interfaces, not only convenient and safe but also simple and reliable, which can make full use of the characteristics of multi-windows and as well as suit to the operators' habits.



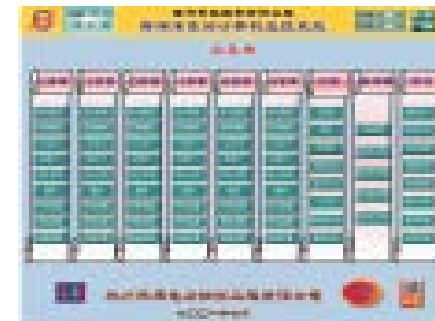
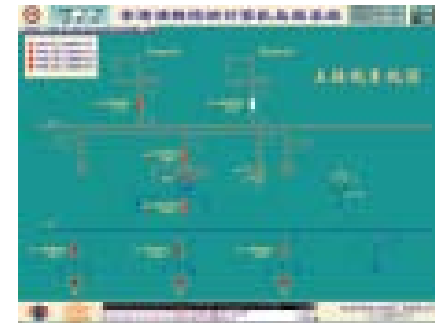
Applicable Solutions:

Automation in Hydro-engineering Fields

SCADA system for pump stations

Main Functions

- Data Sampling and processing
- Safe operation monitoring and event alarm
- Real-time control and regulation operation
- Man-Machine interface
- Synthetic parameters statistics and computation
- Recording and printing
- Phonetic alarm
- Accident process guidance and operation restore guidance
- Data communication
- System clock synchronization
- Post disturbance review
- Pumping equipment operation and maintenance management
- System self-diagnosis and redundancy switchover
- Software development and maintenance
- Training simulation
- Remote diagnosis
- Video linkage with the on-line picture monitoring and control system



Applicable Solutions:

Automation in Hydro-engineering Fields

SCADA system for pump stations Main Engineering Records

- SCADA and CCTV systems for Muhuxi Pump Station of Jiaxing City Flood Control Project
- SCADA and CCTV systems for Sandiantang Pump Station of Jiaxing City Flood Control Project
- SCADA and CCTV systems for Haiyantang Pump Station of Jiaxing City Flood Control Project
- SCADA and CCTV systems for Hangzhoutang Complex of Jiaxing City Flood Control Project
- Information system for of Jiaxing City Flood Control Project
- SCADA and CCTV systems for Hangzhou Chitongpu Drainage Pumping Station
- SCADA and CCTV systems for Hangzhou Xiasha Drainage Pumping Station
- SCADA and CCTV systems for Hangzhou Qibao Water Supply Pumping Station
- SCADA system for Dafengjiang Water Conveyance Project in Guangxi Qinzhou Coastal Industrial Zone



Applicable Solutions: Automation in Hydro-engineering Fields

Gate Control System

The gate control system of HC2000Z series reaches the advanced level of China in design of its functions, graphics display and response time, and it can automatically optimize the gate-opening modes for flood release in conjugation with the hydrological forecasting and flood predicting results so as to enhance the dam safety.

The HC2000Z gate control system has its display pictures showing the main menu, concentrated control operation of various gates, system configuration diagrams, alarming management system, historic trend diagrams, reporting and tabulating management system, instant tabulating, PLC module status and monitoring, and layout of spillway radial gate No.1 to No. N. All the acquired data can be displayed at the upper-level computer display. The system has good friendly online assistance; In case the operator has questions, he can at any time consult the HELP system. The main menu realizes switchover between all windows in the central control system.



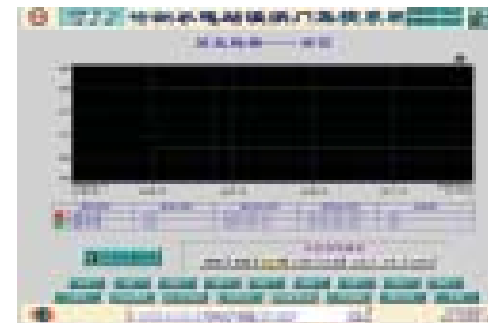
Applicable Solutions:

Automation in Hydro-engineering Fields

Gate Control System

Main Engineering Records

- Central control system for spillway gates of Fujian Zhuzhou Hydropower Station
- Control system for spillway gates of Hebei Huangbizhuang Reservoir
- SCADA for flood-release gates of Hangzhou Qingshandian Reservoir
- Control system for spillway gates of Xianju Xia' an Reservoir
- SCADA for Hangzhou Qibao Sluice Gates

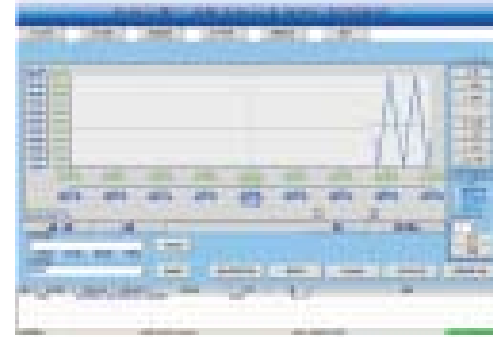


Applicable Solutions:

Automation in Water Treatment Fields

Automatic Water Treatment System

HCECE offers Specific solutions of automatic system for the water treatment projects. The system is designed by the concept of the decentralized control and centralized management. The operational objective of the system is to control product quality. The system realizes the process inspection, time control and close matching in operation of various equipment by the principle of least energy- consumption, least added ingredients and least labor input with the prerequisite of achieving the best water treatment effect, and in turn, the economic and social benefits are increased.



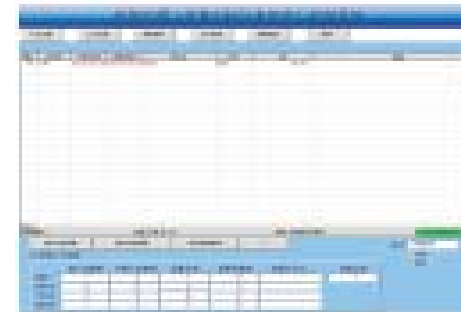
Applicable Solutions:

Automation in Water Treatment Fields

Automatic Water Treatment System

Main Functions

- Data sampling and processing
- safe operation monitoring and event alarm
- Operational display, control and operation
- Data communication
- Data statistics
- Comprehensive parameter statistics and computation



Main Engineering Records

- SCADA system of Water Source Eco-harnessing Project for Jiaying Shijiu Water Plant
- SCADA system of Sewage Treatment Plant at Fuzhou Jiangyin Centralized Industrial District
- SCADA system of Guangxi Mingyang Sewage Treatment Plant



Applicable Solutions: Automation in Navigation Fields

SCADA System of Ship Locks

Since entering the navigation automation control field in 2003, HCECE has successfully worked out safe and reliable control solutions for various navigation facilities (plain gate, miter gate and tumble gate, etc.) through the smooth operation of over 10 large- and medium-sized ship locks.

The SCADA system of HC2000C series for the ship locks is the HCECE solution specifically for the waterway navigation projects. The system of overall PLC-based control structure is designed in distributed configuration. With the control functions distributed at each nodes of a network, the fault at any node will not affect the normal operation of the others. The objective units can either be controlled separately from the others or exert ganged operation through the site busbar and communication network for concentrated automatic control over the normal ship navigation through the ship locks.



Applicable Solutions: Automation in Navigation Fields

SCADA System of Ship Locks

In 2007, HCECE successfully developed the network-based joint regulation and toll collection system, adopting the client/server mode. By the online visit/service platform of Microsoft SQL Server, Oracle, MySQL and PostgreSQL, the joint regulation and toll collection is realized at several ship locks on one navigation channel. The system adopts the wireless RF IC cards to store the basic and current toll collection information of ships, making the IC card-stored data synchronized with the ship lock-stored data. In case the ship locks are not yet interconnected through network, the system can also quickly and effectively realize the joint regulation and toll collection system. The system software is JAVA programmed, it can steadily operated on Window platform as well as on Linux and Unix platform, which offers a necessary guarantee for safe, effective, quick and steady operation of the ship locks.



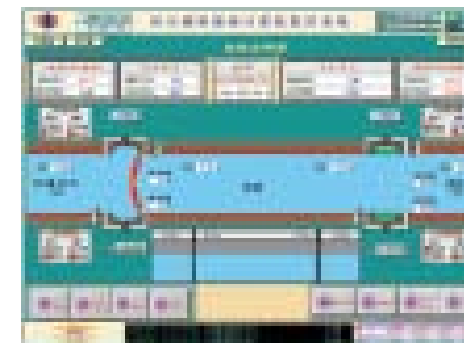
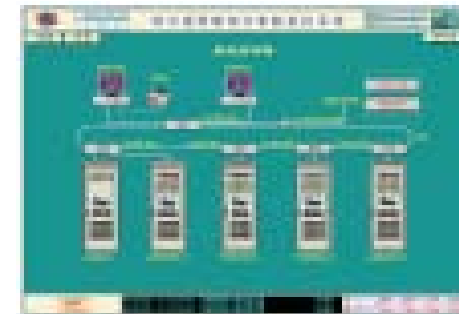
Applicable Solutions:

Automation in Navigation Fields

SCADA System of Ship Locks

Main Functions

- Real-time data Sampling
- Operational display, control and operation
- Ganged control over the signal lamps for entering and exit of the lock
- Safety monitoring and event alarm
- Data communication
- Data statistics
- Hardware self-diagnosis
- Industrial TV monitoring



Applicable Solutions: Automation in Navigation Fields

SCADA System of Ship Locks

Main Engineering Records

- SCADA at Xinba Ship Lock on the Hangyong Canal Hangzhou section
- SCADA at Dashe Ship Lock on the Hangyong Canal Shaoxing section
- SCADA at Tangjiao Ship Lock on the Hangyong Canal Shaoxing section
- SCADA at Tongming Ship Lock on the Hangyong Canal Shaoxing section
- SCADA at Shenglihe Ship Lock of the Hangzhou Canal Harnessing Project in Hangzhou
- SCADA at Zijingang Ship Lock of the Hangzhou Canal Harnessing Project in Hangzhou
- SCADA at Lianhuagang Ship Lock of the Hangzhou Canal Harnessing Project in Hangzhou
- SCADA at Fengjiahe Ship Lock of the Hangzhou Canal Harnessing Project in Hangzhou
- SCADA at Jiangcungang Ship Lock of the Hangzhou Canal Harnessing Project in Hangzhou



Applicable Solutions:

Automation in Electric Power Fields

Automation Management System for Electric Power Management

- Realize the fully control over all electric equipment of the entire system
- Realize monitoring, remote control and automatic management at central PC terminals over the key loads
- Support the user-defined alarms, and provide the real-time events of the power system
- Transmit the protection relay data and measured data to the existing DCS or SCADA system
- Record electric parameters and measured data of various equipment
- Store all wave-shape and SOE data to the permanent archives
- Use the open configuration to realize the integration with any third Party' s equipment

PMCS – Power Management Control System

PMCS is a totally Customized solution for clients, by which the client can acquire, sort, analyze, report and control the electricity quantity through the whole system. After connecting to the measurement and protection equipment network, PMCS will shift the monitoring mainframe into a virtual window for tracing, controlling and analyzing the electricity volume of the system. It can be used for whole-process automatic monitoring and controlling for small, medium- and large-sized industrial systems.

Applicable Solutions:

Automation in Electric Power Fields

Automation Management System for Electric Power Management Main Advantages

Provide real-time data for power management decision

Using PMCS can facilitate a good comprehension on the real-time data of all erected equipment in a system. The user can remotely check all electric events and operation data of the whole system. PMCS can acquire and store the data as well as display the data in a logic way, which facilitates the users to make reasonable judgment or decision. PMCS can search the electric data and other energy data at any node of the network, like gas, steam, and water for instance. PMCS also has the ability to control the load, and can provide powerful energy management functions for engineers.

Simplified Data Presentation, Perfect in Functions

PMCS can display the full view of the system, and realize the monitoring and control over the whole distribution system down to the individual circuits. The data acquired from various protection and control devices can be displayed in a simply read-out way, either in tabulation, graphic or vectorgraph form. The indexed data can also be printed out or sent to other application system.

System Safety

PMCS can establish users' files with different right level for check and configuration so as to ensure the safety of the system under control.

Applicable Solutions:

Automation in Electric Power Fields

Automation Management System for Electric Power Management

Main Advantages

Downtime Reduction

PMCS possesses the real-time monitoring function for power supply of the system operation, such as UPS and PDUs, safety devices, air-conditioning and cooling devices, pumps, fire-extinguishing and life-protection equipment. PMCS can monitor and control the standby diesel-generators of the system so as to ensure the normal operation of all the servers, monitoring and basic equipment during power failure.

Hardware Cost Down

PMCS has a wide application scope, can support numerous measuring and protection devices. The measuring and protection devices it supports may have been installed in the PMCS. To this end, use of the PMCS means reduction of the hardware cost of the equipment.

Time Reduction for Fault Analysis

The latest edition of PMCS adopts the up-to-the-date technology. The fault analysis realized by PMCS is not a conjecture but a detailed data analysis for the fault. The user can thus quickly diagnose and solve the problem of the system in a time-saving and cost-saving manner.

Applicable Solutions:

Automation in Electric Power Fields

Automation Management System for Electric Power Management

Main Engineering Records

- Emergency Power Source Control System of International Broadcasting Center for 2008 Beijing Olympic Games
- Power Management System of Shooting Gallery for 2008 Beijing Olympic Games
- Power Monitoring and Control System of No.2 and No.3 Main Transformers of Shanghai Coal Carbonation Co. Ltd.
- Power Monitoring and Control System of Main Transformer for Carbon Monoxide and Carbinol Production Project of Shanghai Coal Carbonation Co. Ltd.
- Automatic power distribution system of Shenzhen Huawei Data Center
- PMCS of 300000t FPSO oil treatment platform for Bohai Sea Oil Field Stage II



Applicable Solutions:

Automation in Electric Power Fields

Automation Management System for Electric Power Management

Main Engineering Records

- Automatic control system of 35kV Substation of Tongbai Pumped Storage Power Station
- Automatic control system of 110kV substation for 500000t Carbinol production project of Henan Longyu Coal-Chemical Products Factory
- Automatic control system of substation for square-billet casting project of Sichuan Panzhihua Steel Works
- Comprehensive automatic system of Liaoyang Petro-chemical PX Project
- Comprehensive automatic system of 110kV substation of Wuhan Petro-Chemical Product Factory
- GE generator-transformer protection system for 2 × 390MW (LNG) gas-turbine units of Guangzhou Zhujiang Thermal Plant

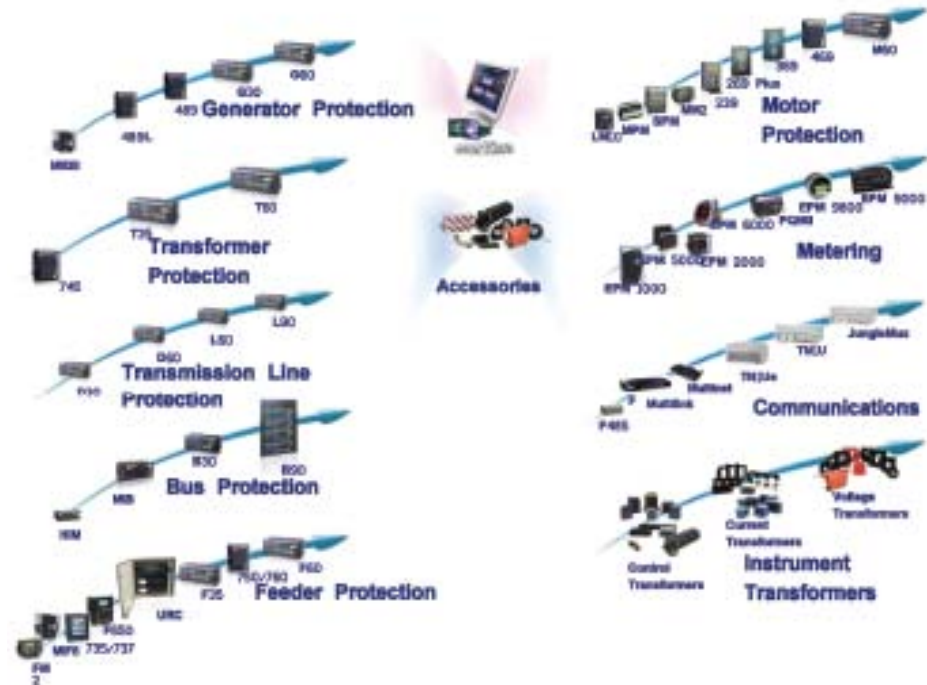


Product Agency



Digital Energy
Multilin

HCECE and GE Digital Energy started the close cooperation since 2003, focusing on the technical aspect and assisting GE headquarter in China in providing the customers application service in industrial control aspect. As authorized value-added reseller for GE Energy, HCECE is responsible for the product sales and value-added service for GE-produced Relay Protection devices, multi-purpose electric energy meters, dual-source automatic changeover switches(ATS), industrial-class Ethernet Switches and SDH equipment, etc.



Product Agency

Overall Solutions for Protection, Control, Measurement and Communication GE Multilin Products Series

The protection and control for electric power system has gradually turned to be a complicated system requiring the interaction of many internal elements. For satisfying the requirement of the costumers on protection of an electric power system GE Multilin has already provided an overall solution covering protection, control, monitoring, measuring and communication as well as the engineering design, and the products can meet the application requirement of power generation, transmission, distribution, motor and communication.

General relay --- UR series

Of the GE Multilin protection product series, the most popularized and most advantageous products are general-type relays, or called UR relays. The UR relays series take the hi-tech common platform, and realize, on one platform, protection for power generation, busbar, line clearance, line differential, line phase compensation, transformer, feeder line, motor, circuit breaker, controller and network, etc.

Products --- SR Series

SR series products are a kind of multi-functional relay for protection of electric-motor, feeder line, transformer and generator. They are developed from one of the core products ----- generator protection products.

Product Agency

Overall Solutions for Protection, Control, Measurement and Communication

GE Multilin Products Series

Products --- 650 Series

F650 clearance controller can meet the above-mentioned requirement in protection and control, which can provide quick and effective protection, control and monitoring for clearance, and it has the protection function for over-current, direction elements, voltage, frequency, CB failure, automatic re-close and synchronization check, etc. In addition, the front plate of the relay is equipped with LCD display, the customer can simulate and display the relevant clearance by programming, which is a quite advanced man-machine dialogue mode.

Products --- M Series

M-series product is a kind of cost-saving and relatively simplified integral solutions, which can realize the basic protection functions. The product provides protection to feeder line, small dynamotor, voltage, frequency, frequency flux and synchronous check.

Product Agency

保护、控制、测量与通讯整体解决方案

GE Multilin Products Series

Measuring Instrument Series

GE Multilin provides the whole-series measuring instrument of commerce-, industry- and power system-class, for basic measurement up to transient trapping and flickering detection. Based on the successful application of PQ and PQMII instrument, GE Multilin has developed other four basic-type instrument of EPM series to meet the requirement of many other specific applications.

In the recent years, GE Multilin has continuously extended its scope of products and services. Now, GE Multilin has added several product series with corresponding services, including Lentrionics multiplexer, instrument transformer (ITI), Electric Power Quality Analyzer, GE Zenith changeover switch, UPS, transient and inrush current suppression device and instrument application service. In addition, GE Multilin provides a series of satisfactory products with corresponding services, such as various associated products (Ethernet exchanger, E/M switch, terminal block and indicator light, etc.), and provides all equipment and services necessary for protection, control, measurement and communication, including automation solution, integral solution, real-time digital simulating service, consultancy and training in protection and communication.

Engineering Service System

Consultancy, Design and Technical Support for System Solutions

HCECE offers all-position service for system solutions in consultancy, design and technical support to meet the requirement of the clients, and realize a customer-oriented pre-sale engineering service system through extensive communication between the HCECE professionals and the customers.

Site Service

HCECE executes the in-situ service, including equipment calibration and test, overall check of the SCADA system, technical consultancy and training, etc., assistance to the customers in equipment inspection, and handling on site various troubles the customers may encounter in maintenance.



Engineering Service System

Prompt Response after Sale

Having pursued the tenet of “For the customers and For the Site Requirement” , HCECE is always praised by the customers for its post-sale service and enjoys good reputation in the hydro- engineering field.

Upon receiving the notice of equipment trouble, the post-sale service staff of HCECE will arrive at the site in shortest possible time.

All the monitoring and control systems developed by HCECE inherit the remote diagnosis function so as to enhance the post-sale service effect. In case the system runs with abnormal phenomenon, it can be diagnosed remotely for a preliminary diagnostics, which facilitates assigning suitable technicians to site for maintenance.



Engineering Service System

Training

Training the customer’ s operators and exchanging with the customer the technical ideas is one of the key activities in HCECE’ s monitoring and control system development. A system can never operate satisfactorily without the customer’ s good awareness of the technologies embodied in the system through good training.

The training for the customer’ s operators may be in three steps, i.e., lectures in lab, simulation operation and in-situ operation, and it can also be conducted by operating the equipment in the hardware equipment factory.

HCECE prepares the specific documents for training, including data of hardware equipment, user’ s manual, O&M guideline, software tools manual, etc. The system is inhered with HELP and SIMULATION functions, all the man-machine interfaces are provided with menu prompt. These offer a big convenience in training.

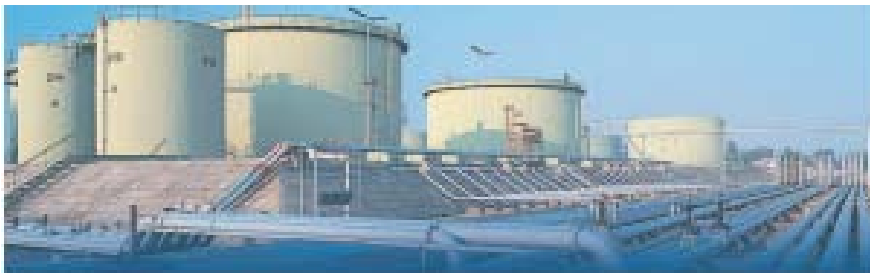


Quality Assurance System

HCECE always takes the quality as lifeline of the enterprise. For implementation the quality policy: “Strictly control the process, firmly adhere to product and service quality improvement, and continuously upgrade satisfaction of the customers” , HCECE establishes its production quick-action system and engineering service assessment system to implement the whole-process quality monitoring and control from the product design and development, project design, system integration, site service and project acceptance; furthermore, HCECE conducts monitoring and measurement on the key quality control points so as to guarantee the products and service to meet or exceed the design requirement.

HCECE was first qualified in the authentication by ISO9001 in July 2004 and qualified again in July 2007. Its quality system is in compliance to the standard.

The SCADA System of HC2000 Series developed by HCECE has received in August 2008 the CE certification for entry of EU market, and the products are in compliance to the EU safety and quality standard and at the advanced level in world.





Digital Energy
Multilin

通用电气增值服务分销商



Hangzhou Huachen Electric Power Control Co., Ltd.

**Add.: 12th Floor, Sunshine International Business Center, 186-1# South
Hushu Rd, Hangzhou, PR China**

Tel.: 0086-571-88056576

Email: hzhcece@mail.hz.zj.cn

Fax: 0086-571-88848147

Website: <http://www.hcece.com>