

# Reliability and Safety for the Energy Supply Industry



Power Station  
Control Systems



Power Distribution  
Control Systems



Control Room  
Technology

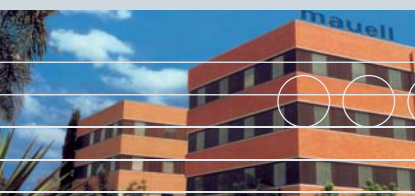


Automation  
Equipment

**Innovation, Quality and Consistency** are the key factors for the success of the company since it was founded by Helmut Mauell in the year 1957. Today Mauell components and systems benefit from their world-wide reputation for reliability in monitoring and controlling technical processes. We know that integrated systems can only be developed successfully if we work together very closely with the customer, analyzing the given requirements directly on site.

The almost 600 highly motivated members of staff of our medium-sized enterprise (400 of them working at our German locations) provide all the services you need to find the best solution for your automation task.

Sales and service locations and Mauell subsidiaries with their own production facilities in Switzerland, Brazil and the United States are the guarantee for a successful cooperation with our clients.



#### **Partner of the Power Supply Industry**

Mauell is a leading manufacturer of control and instrumentation systems for the automation of power generating plants and distribution networks. Being fully in line with the stringent safety standards of the power station industry, our future-oriented system solutions help you to protect your investments by improving the operational reliability and availability of your plant.

For our company management, the corporate independence of Helmut Mauell GmbH is the basis for short decision making processes and a dynamic development and production flow. This allows us to quickly respond to continuously changing production processes and communication paths and master these requirements with innovative system solutions.

#### **Prepared for the Future**

For our company this objective is as relevant today as it was in the past. Technical know-how and engineering competence in conjunction with innovation complexity and a high degree of vertical integration, as well as the use of best-of-breed components and systems for the automation of power generating plants and distribution networks are our qualities to reach this goal.

mauell

Argentina

Brazil



## Our Business Fields

The Mauell manufacturing works combine well-proven electronic standard equipment and individually designed components into highly customized solutions that meet every aspect of market demands – from small automation tasks to complex process control systems, from mosaic indicator boards to the design and supply of complete control room systems. Our system solutions for the visualization of all types of process information incorporate a wide range of state-of-the-art products, such as indicator panels, signaling devices and large-screen projection systems.

Their outstanding future-oriented features enhance their compatibility with numerous enterprise solutions.

### Control Room Technology, Mosaic Systems and Large-Screen Rear Projection

Mauell control rooms are well established in the fields of energy generation and distribution, in traffic management centers, and in many other fields of industry. We can offer you the complete range of products and services, from the utilization draft to the detailed planning and finally the installation of the chosen control room technology, be it conventional mosaic displays or state-of-the-art large-screen rear projection. In addition to control rooms for the monitoring and control of production and distribution processes, we manufacture simulator control rooms for monitoring the operation characteristics of the power units and the simulation of various fault conditions.

### Control and Instrumentation Systems for Power Generating Plants

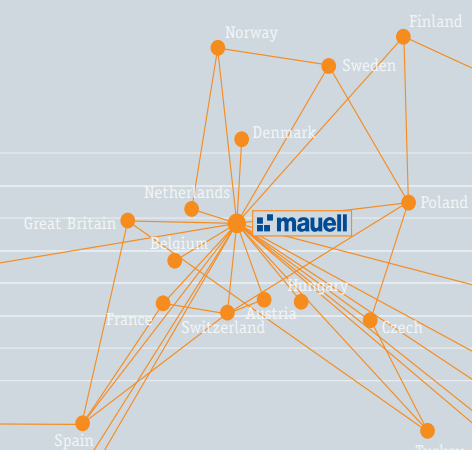
Based on a consistent system-oriented and real-time control approach, our ME 4012 process control system has been designed for the control of all sections of a power station location. Today, ME 4012 controls large-scale steam generators, steam turbines, power station auxiliary plants, hydroelectric power plants, and waste-fueled power stations using complex environmental technologies.

### Automation Equipment

High quality based on praxis-oriented technology – core characteristic of our well proven automation equipment that can be used in all fields of industry. All Mauell systems and devices benefit from over 50 years of experience and our vast process knowledge. With their innovative features and specific functional characteristics, they stand out from similar competitive devices or bridge a gap in the market.

### Energy Distribution (Power Distribution, Station and Remote Control Systems)

Our control systems are employed in all types of supply and distribution networks for gas, electricity, water and district heating, as well as in industrial remote control applications and building automation systems.



### Tailor-made System Structures

The increasing complexity of the processes in today's power stations put an even greater demand on control and instrumentation systems. Not only must these systems offer tailor-made architectures and modern control algorithms and strategies, but also a high degree of control efficiency based on application experience. System architectures and communication standards that are open for the integration of third-party systems are of course a must.

### Performance

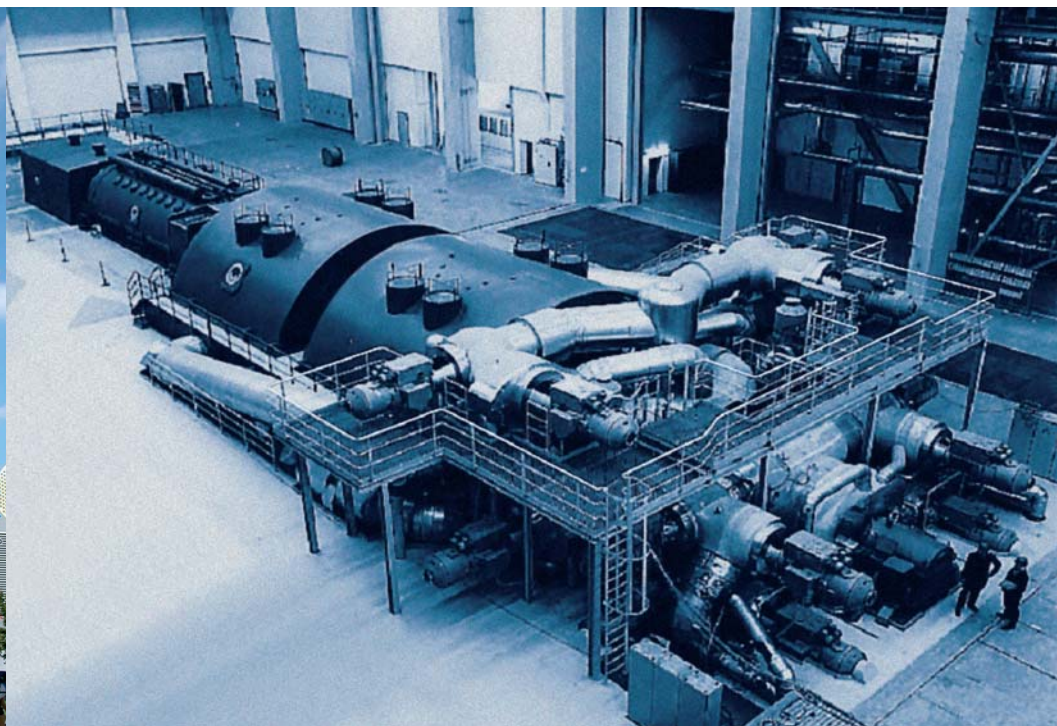
With our ME 4012 process control system, we offer a consistent control

philosophy that can be applied to all sections of power station control. In the fields of steam and gas turbine automation, for example, our system meets the extremely high demands on turbine control criteria such as the precision control of the highly dynamic processes and implementation of SIL3 failsafe and protection functions. This enhances the primary and secondary controllability and considerably increases the turbines operational reliability and availability. Our turbine reference plants have capacities in the range from 9 MW to 900 MW. Some examples of successful application: Mauell's ME 4012 process control system operates as station control system for the new 750 MW gas and steam plant (4 gas turbines, 2 steam turbines) of the Munich South cogeneration

power station (with a heat output of 1700 MW), controls the 6 main turbines (600 MW each) of Eskom power station Matla, South Africa, and will soon be employed for the 1000 MW turbines of a nuclear power station.



# Power Station and Process Control Systems



### **System Development over Generations**

Efficient and reliable control and monitoring of widespread supply and distribution networks can only be achieved with powerful and reliable process and remote control systems. Our systems for power distribution automation meet these high requirements. They can be easily matched to the specific tasks involved and are equally suitable for small, medium-size and large applications. Consistent system development over many generations and implementation of the latest standards are our guarantee for future-oriented solutions.

### **Compatibility**

Standardization is one aspect. Equally important is the close cooperation with the customer that enables us to flexibly respond to different customer requirements and provide solutions optimally adapted to the specific automation task. Open system structures and standard interfaces allow the communication with third-party control systems. If you are looking for a partner who provides the professional expertise required for large projects just as easily as the competence demanded by small tasks, and who is known for his innovative approach, high sense of responsibility as well as his reliability for on-time delivery, please call us.



# Power Distribution Control, Station Control and Remote Control Systems



### **Control Room Solution: Design and Functionality**

A design that is both functional and ergonomic is a basic criterion not only for the reliable and error-free operation of a plant, but also for operator motivation and alertness. For us, the specialists in control room design, plant requirements and operator needs are the two major aspects of control room design. As it is vitally important that a control room and its operators are considered as a whole, our integral design concepts are based on ergonomic and anthropotechnical principles apart from fulfilling technological and economical requirements. Taking into account all technological standards, spatial conditions and material requirements, we produce a computer simulation of the future control room in close cooperation with the customer. This simulated model allows the control room personnel to visually „walk through“ and „feel“

its future working environment. Our long-standing experience in the design of control rooms is your guarantee for receiving an expert and quality-based service throughout the entire project from the utilization draft to the detailed planning and finally the installation of the chosen technology, be it mosaic displays or large-screen rear projections.

### **Mosaic Systems**

Our customer-specific mosaic systems are installed in numerous control rooms all over the world. Not least because of their variable application and arrangement possibilities they offer optimal solutions for a variety of processes that require clear and well-structured representation. Today our mosaic displays are installed for example in the New York Central Station, the Tianwan nuclear power station in China, and the Florida Power and Light Generating

Plant where the world's largest mosaic panel has been constructed using as many as 450,000 Mauell components.

### **Visualization Technology**

Large-sized ME multiView cubes and ME multiView LCD displays are at the heart of our visualization technology for control rooms and other monitoring facilities. Optionally all input and output information from modern information processing equipment can be routed virtually and with client-oriented precision with our standard ME multiView controllers. The devices can be arranged freely to form large straight line or polygonal pixel volume areas. This opens the way for a future-oriented and interactive information unit that combines ergonomic design with optimal application efficiency and that can be comprehensively integrated in our customer-friendly maintenance and service concept.

# Control Room Technology



### Quality Assurance

Our automation equipment is manufactured at our own modern production facilities. A comprehensive DIN EN ISO 9001: 2000 quality assurance system supplemented by strict in-house specifications guarantee highest quality standards. Our portfolio comprises signaling devices, relays, communication devices and power electronics.

### Signaling Devices

Signaling devices provide the overview needed by the operating personnel, and supply the information necessary for decision-making. Our systems are capable of processing large quantities of information at a high time resolution.

Outstanding qualities are their high degree of availability and transmission reliability. With our range of products – from conventional alarm systems to the highly advanced ME30 infobox devices – we are able to provide optimal solutions for all monitoring and event recording tasks.

### Relays

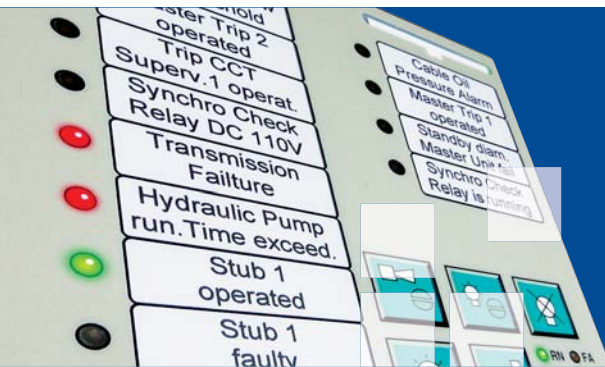
The following types of relays are available:  
Rugged design annunciator relays used for the indication of danger and alarm situations and operational states in control rooms, control consoles and mimic diagrams.  
Auxiliary and crosspoint relays for the electrical isolation between the control and operating circuits.  
Time-delay relays with different time ranges and functions.

### Communication and Automation Systems

Amplification of analog and binary commands is required in quasi all process engineering plants as this is a precondition for implementing the technical concepts of programmable controllers and feedback control loops. Our couplers and power controllers are matched to the different applications and provide a system-compatible interface between the programmable controller and switchgear section of the power.



# Automation Equipment



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**Kuwait**

**Netherlands**

**Norway**

**Poland**

**Singapore**

**Spain**

**Sweden**

**Switzerland**

**Turky**

**USA**



The logo for mauell, featuring a stylized blue square icon composed of four smaller squares to the left of the word "mauell" in a bold, blue, sans-serif font.

[www.mauell.com](http://www.mauell.com)