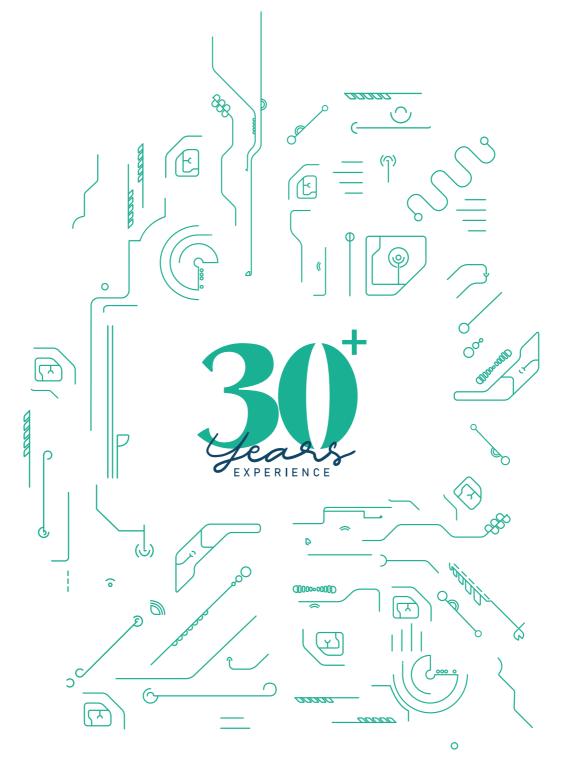
PANEL PRODUCTION AUTOMATION CATALOGUE









PANEL PRODUCTION



Founded in 1988 in Konya as Şalt Elektrik, our company strengthened its leading position in the sector by adopting the title Şalt Otomasyon Ltd. Şti. in 2000. Since its establishment, our company has been providing uninterrupted service as one of the leading firms in the region with its electrical engineering services and electrical-automation equipment sales.

Our company shapes its production processes with a quality-oriented philosophy and successfully meets the requirements of international standards such as ISO 9001, ISO 14001, ISO 45001, ISO 27001, and ISO 22301 by enhancing employee awareness. Over the years, it has successfully completed comprehensive electrical contracting projects in various sectors, from industrial facilities to shopping malls, hospitals to hotels, becoming a reliable partner in energy and automation solutions.

With our expert staff and innovative approach, we continue to make a difference in the industry by offering customer-oriented solutions. From project design to commissioning, we prioritize quality and customer satisfaction by adhering to international standards at every stage.

In 2007, our company signed a Panel Partnership Agreement with Siemens Sanayi A.Ş. and began producing panels in compliance with type test norms on behalf of Siemens. This collaboration has enabled us to adopt Siemens' quality control standards, advance our technical expertise, and add value to our solutions.

Our company not only offers products and services to its customers but also adopts a long-term business partnership and trust-focused approach. Şalt Otomasyon continues to maintain its pioneering identity in the energy and automation sector by meeting the needs of the future today.

Panel Production



As Şalt Otomasyon, we carry out our panel manufacturing processes in compliance with international quality standards, leveraging cutting-edge technology and engineering infrastructure. In our 1,500 m² production area, we deliver high-performance solutions that meet the diverse needs of the energy and automation sectors. Along with Siemens type-tested panels, we also oversee the production and assembly of panels from the Tempa and Hensel brands, as authorized dealers.

From project design to production, assembly, and testing, all our operations are conducted in line with ISO 9001, ISO 14001, ISO 45001, ISO 27001, and ISO 22301 quality management systems. In adherence to CE standards, we conduct all necessary electrical safety tests and functionality checks during panel production, followed by final quality evaluations before shipment to ensure complete customer satisfaction.





Powerful engineering smart solutions



Şalt Otomasyon provides automation and electrical solutions tailored to various sectors, including industrial facilities, power plants, infrastructure, and construction projects. From project design to commissioning, we offer engineering services in compliance with international standards at every stage. With reliable partnerships and a wide range of products, we continue to prioritize customer satisfaction and maintain our position as one of the leading firms in the industry.





Industry and Manufacturing

We provide innovative and reliable solutions for pharmaceutical, defense, iron and steel, food, cement, automotive, plastic, and chemical industries.

Our services aim to enhance efficiency, sustainability, and quality in diverse manufacturing processes.

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Energy and Environment

We provide sustainable and innovative solutions for biogas plants, wind and solar power plants, and wastewater treatment facilities.

Our aim is to contribute to the future by promoting the efficient use of renewable energy sources and implementing environmentally friendly practices.



//02



Infrastructure and Construction

We offer comprehensive solutions for airports, residential projects, commercial buildings, educational facilities, and hospitals.

Our aim is to add value to living spaces by constructing safe, modern, and sustainable structures.

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Panel product range

Siemens Sivacon S8 Panels



The new generation Sivacon S8 series panels, offering maximum safety, an attractive design, and an ideal solution, are type-tested (TTA), feature a dual front design, and provide solutions for residential and industrial buildings from Form 1 to Form 4b, IP30 to IP54, and up to 7000A. With its modular design, Sivacon S8 can be optimally adapted to every requirement during the planning of complete power distribution. Combining a modern design with SIMARIS software, the system offers a high level of safety and an efficient solution.

Siemens Sivacon S4 Panels



The Sivacon S4 series panels provide economical solutions for distribution systems up to 4000A. With its modular structure and flexible installation options, the Sivacon S4 addresses a wide range of application requirements. Thanks to its optimized design, it enables extensive use in industrial applications and the infrastructure sector.

Siemens Sivacon S8 Withdrawable Panels





These are type-tested withdrawable panels designed for Motor Control Centers (MCC) and cable feeder outputs (circuit breaker outputs). The withdrawable motor protection and cable feeder design ensures maximum safety and operational ease. Thanks to the withdrawable unit principle, quick replacements and new adaptations are easy to perform. Therefore, individual modules can be easily replaced and upgraded.

Siemens Alpha Panels



ALPHA Universal modular distribution panels offer a comprehensive range of sizes up to 630A. With their flexible structure, they provide suitable solutions for various user demands across different applications. Thanks to the open side panels, ALPHA Universal Modular Distribution Panels are an ideal system for fast and easy installation in side-by-side configurations.

Tempa Panel



Tempa Pano offers robust and functional enclosure solutions, particularly for industrial facilities, power distribution systems, and automation projects. Its product portfolio includes wall-mounted, free-standing, stainless steel, modular system enclosures, and specially designed panels with IP protection. With high-quality materials, a wide range of accessories, and a modular structure, it adapts easily to different project requirements. Leveraging the advantage of local production, it stands out by providing fast delivery and customized solutions tailored to customer needs.

Rittal Panel



Rittal Panel is a global brand offering high-quality panel systems for industrial automation, energy distribution, and IT infrastructure. The product range, which stands out with innovative cooling, protection, and installation solutions, includes wall-mounted, floor-standing, modular, and stainless steel panels. Its robust construction, flexible design options, and extensive accessory support ensure reliable performance in challenging industrial environments.

EAE Panel



EAE Panels offers innovative and reliable enclosure solutions for power distribution and control systems. Their products, featuring modular structures, flexible design options, and the use of durable materials, include wall-mounted, free-standing, and custom models for specific applications. Optimized panels for industrial facilities, commercial buildings, and infrastructure projects stand out with user-friendly mounting options and a wide range of accessories.

Panel usage areas

Electrical panels play a critical role in energy management and automation processes. With various types such as main distribution panels, compensation panels, motor control panels, PLC control panels, building automation panels, and solar power distribution panels, they have a wide range of applications from industrial facilities to commercial buildings, from power plants to automation systems. We provide safe and efficient energy management by offering tailored solutions for every need.

Main Distribution Panels



Panel systems are used in industrial facilities, factories, workshops, and all areas where low-voltage power control is required to ensure the safe and efficient distribution of electrical energy.

Compensation Panels



Compensation panels, used to improve energy efficiency and correct the power factor, include the necessary devices, capacitors, and measuring instruments to correct the facility's power factor.

Motor Control Panels (MCCs)



Motor control panels (MCCs) are designed to ensure the safe and efficient operation of electric motors. They are commonly used in environments with high motor control demand, such as production lines, factories, smart buildings, treatment plants, and pump stations.

PLC Control Panels



PLC control panels, used in environments with high motor control demand such as production lines, factories, smart buildings, treatment plants, and pump stations, manage industrial automation systems.

RTU Panels



RTU (Remote Terminal Unit) panels are essential components of industrial automation systems, enabling seamless data communication between field devices and the central control center. They gather and process data from field equipment, transmitting it to the main system to support remote monitoring, control, and data acquisition operations.

Building Automation Panels



Building Automation Panels are designed based on the size of the building, its intended use, and the type of application. They enable the integrated management of electrical systems, HVAC systems, and lighting. Thanks to open communication protocols, our systems can be easily integrated with other building management systems.

Secondary Protection Panels



Secondary Protection Panels are used for protection, control, measurement, and monitoring purposes of high-voltage motors, transformer stations, various industrial power systems, generators, and power transmission lines against phase-to-phase or phase-to-ground short circuits.

Mimic Control Panels



Mimic Control Panels have been used in industry for many years to display process status and alarms. Process or flow diagrams are graphically represented on the front side of the Mimic Control Panel.

Synchronization Control Panels



The need for synchronization arises when two or more alternators must work together to supply power to a load. Since electrical loads are not constant, two or more generators must be connected and operate in parallel to efficiently handle larger loads.

Local Control Panels



Local Control Panels are typically used to control machinery or equipment either locally or remotely, and are installed close to the controlled device. They are frequently used on machines due to their ease of maintenance and assembly.

Frequency Converter Panels



With the advancement and decreasing costs of semiconductor technology, motor starting systems have also become electronic. Frequency Converter Panels are used for processes such as speed control, flow monitoring, motor data acquisition, and soft start/stop.

Server Control Panels



Server Control Panels are specially designed enclosures that accommodate technical equipment such as routers, switches, hubs, and servers. These panels ensure the secure and organized arrangement of system components and simplify cable management.

Solar Power Plant Distribution Panels

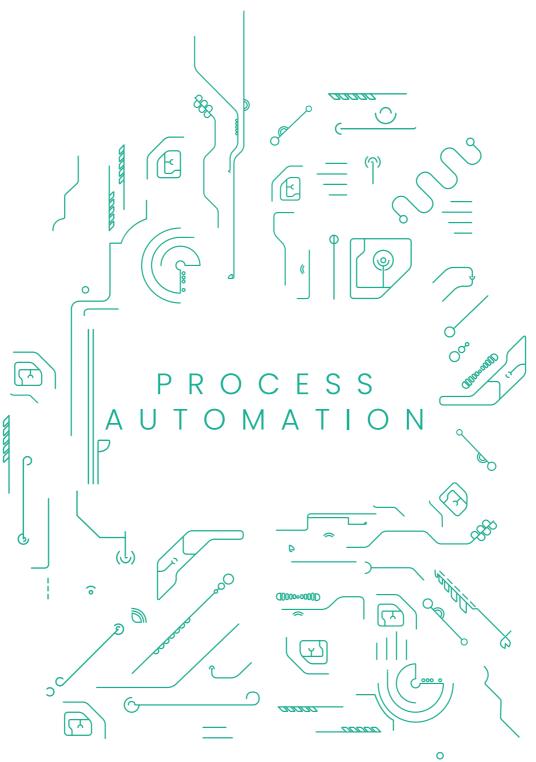


Solar Power Plant Distribution Panels (SPP Distribution Panels) are essential components used in renewable energy systems. They convert the DC energy produced by solar panels into AC energy with the help of an inverter, while performing protection, switching, measurement, and distribution operations.

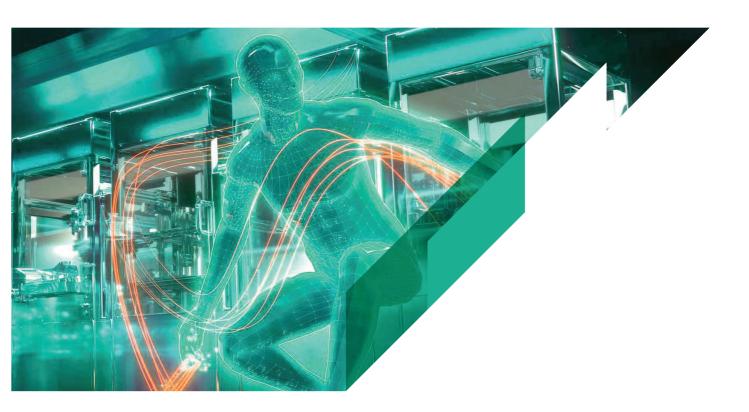
e-Charging Panels



The e-Charging panel used for charging electric vehicles comes in two types: AC and DC. It is available in AC charging capacities of 7 kW, 11 kW, and 22 kW, and DC charging capacities of 30 kW, 60 kW, and 90 kW.



Process Automation



Process automation is the use of various automation technologies to enhance the efficiency and safety of production processes. At Şalt Otomasyon, with our experience and knowledge accumulated since 1988 in the energy sector, we maximize efficiency in industrial facilities by providing high-quality control systems, sensors, and software solutions in process automation. We enable our customers to remotely monitor and control their processes while minimizing error margins and optimizing energy consumption.

Moreover, after the design phase in each project, we meticulously carry out testing, commissioning, and programming processes to ensure the systems operate in the most efficient manner. All our solutions are tailored to meet industry-specific requirements and are delivered in compliance with high security standards.



Şalt Otomasyon provides innovative and efficient systems to the industrial and energy sectors with comprehensive automation solutions.

We develop customized automation solutions for industries such as pharmaceuticals, defense, steel, food, cement, automotive, plastics, and chemicals, optimizing their production processes.

In the energy and environmental sectors, we contribute to sustainable energy management by providing advanced automation systems for biogas and wastewater treatment plants. Through efficient automation solutions, we optimize energy management and support environmental sustainability.

Industry and Manufacturing

In the industrial and manufacturing field, we provide solutions for pharmaceutical, defense, iron-steel, food, cement, automotive, plastic, and chemical factories.

We aim to make a difference by delivering reliable, efficient, and innovative services for production processes in various sectors.









Energy and Environment

In the energy and environmental sectors, we provide advanced automation systems for biogas plants and treatment facilities, contributing to sustainable energy management.

With efficient automation solutions, we optimize energy management and support environmental sustainability.

Automation Application Areas



We Enhance Efficiency with Sectoral Automation Solutions...



As Şalt Otomasyon, we provide automation solutions in various industrial fields such as feed mills, steel silos, process control (PCC), bulgur production, wastewater treatment & water preparation, galvanization, boilers, and biogas, making production processes more efficient, safe, and controllable.

With our advanced engineering infrastructure and industry-specific software-hardware integration, we contribute to facilities achieving energy savings, error-free operations, and sustainable production. Feed Mill Automation 1.

Steel Silo Automation 2.

PCC (Process Control) Automation 3.

Bulgur Automation 4.

Wastewater
Treatment &
Water Preparation
Automation

Galvanization Automation 6.

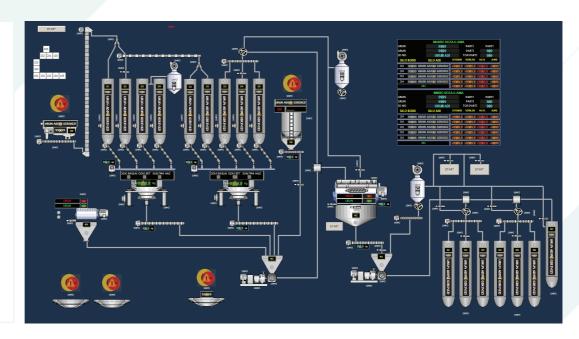
Boiler Automation 7.

Biogas Automation

8.

Feed Mill Automation

Automation systems in feed mills make production processes more efficient, safer, and more sustainable by leveraging the advantages of modern technology. With automation, error margins in production processes are minimized, quality standards are improved, and energy savings are achieved. In addition, all processes can be monitored and controlled in real time via SCADA systems.



Automation Stages

Raw Material Intake (Feeding) Automation

Incoming raw materials are weighed using scales and recorded into the SCADA system. Quality control is ensured through moisture, temperature, and foreign substance sensors. Raw materials are directed to silos via automatic conveyor systems. SCADA monitors silo fill levels, optimizing

Grinding and Mixing Automation

raw material management.

 During the grinding phase, crushers and mills are controlled via SCADA, and particle sizes are optimized. Motor loads, temperature, and pressure values are monitored in real time. The mixing process is adjusted to ensure a homogeneous distribution.

Cooling and Screening

 Pelleted feed is cooled down to 25–30°C using coolers to enhance its hardness. Unwanted particles and dust are separated using screening systems to improve quality.

Dosing Automation

 Raw materials are automatically taken in the specified proportions according to the recipe by dosing systems. The SCADA system ensures each component is used in the correct proportions. Thanks to precise weighing systems, materials are dosed with a tolerance of ±0.5%.

Pelletizing Automation

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 During the pelletizing process, temperature (80–90°C), humidity (14–17%), and pressure (150–250 bar) are controlled by SCADA. Pellet hardness and density are continuously monitored by sensors to maintain quality

Packaging and Storage

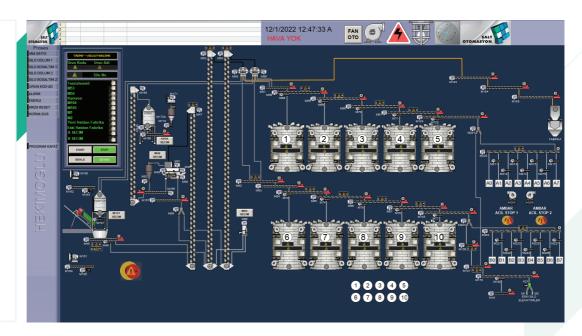
 Feed bagging machines prepare products in 25 kg, 50 kg, or 1-ton packages. Labeling systems retrieve product information from the SCADA database and print it on the bags. Warehouse management systems update stock levels in real-time, optimizing shipping planning.

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Steel Silo Automation

Steel silo automation includes advanced automation solutions that optimize raw material storage, material flow, and inventory management. Automation enhances operational efficiency, minimizes human intervention, and reduces error rates. With SCADA and PLC systems, all processes can be monitored and controlled in real time.



Automation Stages

Raw Material Intake and Discharge System

 Incoming raw materials are measured by sensors and weighing systems, and recorded into the SCADA system (with an accuracy of ±0.5%). Material transfer is carried out using pneumatic and mechanical conveying systems. Dust collection systems minimize the environmental impact.

Material Flow and Distribution Automation

 Material flow is automatically controlled through conveyor belts, screw conveyors, and pneumatic transfer systems. Diverter valves and actuators guide raw materials to designated silos, ensuring precise and efficient distribution.

Stock Management and Level Control

Stock levels are tracked with 0.2% accuracy using level sensors (radar, ultrasonic, or capacitive). Automatic filling and unloading systems optimize warehouse management by preventing product contamination. Silo fill levels are monitored in real time through the SCADA system.

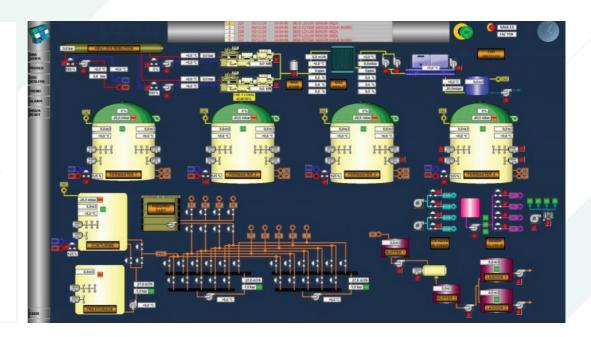
Fault Prevention and Alarm System

3.

 SCADA-based alarm systems detect overflows, blockages, and equipment failures, providing real-time alerts to operators. Thanks to remote access and mobile notifications, operators can instantly intervene in the system when necessary.

Biogas Automation

Automation systems in biogas plants enable the efficient processing of organic waste and ensure the optimal management of energy production processes. Advanced automation solutions allow continuous monitoring, control, and optimization of all operations. This ensures uninterrupted biogas production, improves energy efficiency, and minimizes environmental impact.



Automation Stages

Waste Feeding and Pre-Processing Automation

 The initial stage in biogas plants involves the acceptance and proper preparation of organic waste. SCADA-assisted control systems optimize feeding rates to ensure a balanced intake. Sensors analyze the type and content of the waste to determine the optimal feeding rate for the reactor.

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Gas Storage and Purification Automation

 The produced biogas is purified of impurities before being transferred to storage units. Sulfur removal, moisture extraction, and carbon dioxide separation are carried out by automated control systems. Through SCADA software, the gas quality is analyzed, and optimal conditions for the storage process are established.

Fermentation and Gas Production Automation

 The biological decomposition process carried out by microorganisms in reactors is continuously monitored in real time via SCADA systems. Key parameters such as pH, temperature (35–40°C mesophilic, 50–60°C thermophilic), pressure, and sludge level are constantly tracked to ensure optimal biogas production. PLC-based systems minimize fluctuations in gas output, ensuring a stable and efficient production process.

Energy Production and Distribution Automation

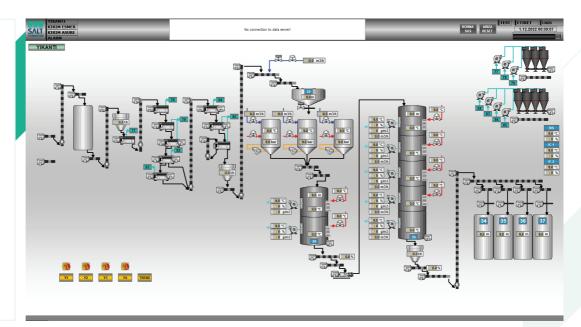
 The generators and cogeneration systems that convert biogas into energy are integrated with automation systems. Gas flow rate, combustion efficiency, and energy output are continuously monitored to ensure the system operates at peak efficiency. The generated energy is automatically directed to the grid or to the units within the facility.

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Bulgur Automation

Automation systems in bulgur production optimize production processes, improving energy efficiency while enhancing product quality. Fully automated systems in production facilities manage processes without the need for manual intervention. SCADA systems monitor every stage of production, providing real-time data flow and offering operators the ability to optimize processes.



Automation Stages

Storage and Transportation of Raw Materials

 At the raw material entry stage, materials are securely stored using silo systems and automatic conveyor lines, and directed to the production lines. SCADA systems continuously monitor stock levels and send automatic alerts in case of shortages.

Boiling and Drying

 The boiling and drying of bulgur at specified temperature and humidity levels is controlled by automation systems. SCADA analyzes temperature, time, and humidity levels in real-time and provides operators the opportunity to monitor the process. During the drying phase, heating systems and fans are automatically adjusted to ensure energy efficiency.

Sieving and Sizing

Ground bulgur is passed through sieving systems to separate it into various size fractions. Granule size is analyzed by sensors, and classification is performed accordingly. The SCADA system optimizes the fill levels and production speed of each sieve group.

Sieving and Cleaning

 In bulgur production, vibrating sieving systems are used to separate foreign materials. Dust and foreign particles are removed through automated filtration systems during the process. With sensor and SCADA integration, fill levels and sieving efficiency along the production line are monitored in real time.

Grinding in the Mill

 Mill systems are used to grind bulgur to the desired fineness. Motor speeds, pressure, and vibration levels are controlled by PLC and SCADA systems to ensure optimal performance.

Packaging and Shipping

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 Automatic filling and packaging machines determine the weight of the products using precise weighing systems and perform the packaging. The SCADA system records production speed, filling levels, and packaging data, monitoring the overall performance of the production line.

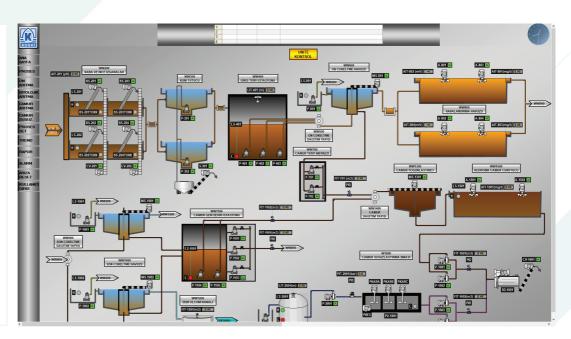
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Wastewater Treatment & **Water Preparation Automation**

Automation in industrial and municipal wastewater treatment plants is a critical component that ensures water is treated efficiently and made reusable. These systems ensure optimal results during the physical, chemical, and biological treatment stages of water while minimizing energy and chemical consumption. With SCADA systems, all processes across the facility are monitored, controlled, and optimized in real time.



Automation Stages

Influent Water and Screen System Control

The flow rate, turbidity, and pH values of the incoming water to the wastewater treatment plant are continuously monitored using sensors connected to the SCADA system. The screen systems automatically trap and clean coarse particles (solid waste, plastics, etc.).

Chemical Treatment and pH Balance

Chemical dosing systems automatically balance the water's pH levels and chemical components. SCADA control optimizes coagulation and flocculation processes.

Filtration and Disinfection

Sand filters, activated carbon filters, and membrane filtration systems are managed automatically. Chlorination or ultraviolet (UV) disinfection systems ensure the water is safe and ready for end use.

Physical Treatment (Aeration and Settling Tanks)

Aeration systems optimize oxygen levels to improve biological treatment efficiency. SCADA systems monitor sludge levels and flow rates in aeration tanks, automatically adjusting the dosage control.

Biological Treatment

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Organic pollution is removed using activated sludge systems or biological filters. SCADA systems monitor microorganism activity and oxygen demand, optimizing the aeration systems.

Treated Water Storage and Distribution

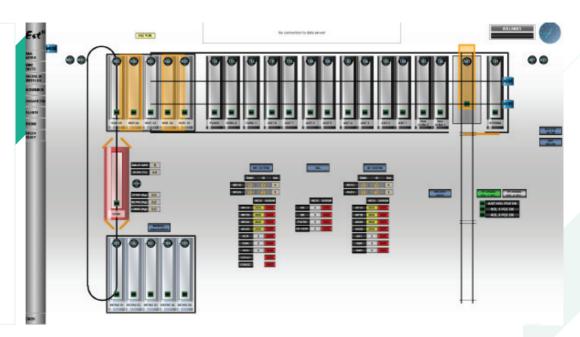
The treated water is stored in appropriate tanks and automatically pumped to usage areas. SCADA systems optimize water levels, pressure, and flow rate to ensure efficient water utilization.

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Galvanization Automation

In galvanizing plants, automation aims to maximize efficiency while standardizing quality by increasing the precision of coating processes. Automation systems provide control and monitoring at every stage of the zinc coating process. Thanks to SCADA and PLC systems, all processes can be managed from a central point, and potential production errors are minimized.



Automation Stages

Surface Preparation Automation

The success of the galvanizing process depends on the precision of surface preparation. Degreasing, acid cleaning (pickling), and rinsing operations are optimized using automatic sensors and dosing systems.

Cooling and Passivation Automation

 After coating, the parts are cooled, and the passivation process for surface protection is automatically performed. In this process, the correct ratios of chemical components are ensured.

Zinc Coating (Dipping) Automation

Automation systems precisely control the zinc bath temperature, immersion time, and coating thickness. This ensures that the coating quality consistently meets the required standard.

Quality Control and Monitoring

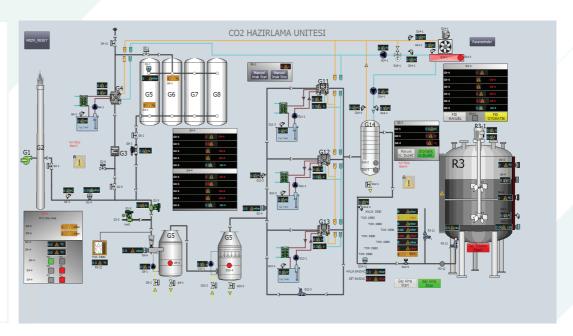
All process data is collected and analyzed through SCADA systems.
 Automatic measurement devices are used for coating thickness, surface smoothness, and defect detection. In case of abnormal conditions, the system automatically provides alerts, and the process is optimized without the need for operator intervention.

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C-PCC (Process Control) Automation

PCC systems enable accurate monitoring and control of physical parameters in industrial production processes. SCADA systems manage critical variables to enhance production efficiency and eliminate process deviations.



Automation Stages

Temperature and Pressure Control

 In process control systems, temperature and pressure are continuously monitored by sensors integrated with SCADA. The PLC maintains these parameters within predefined operational limits.

Data Collection and Analysis

 The SCADA system gathers and analyzes data from the production process. These insights are compiled into reports to support process optimization and continuous improvement.

Flow and Chemical Dosing

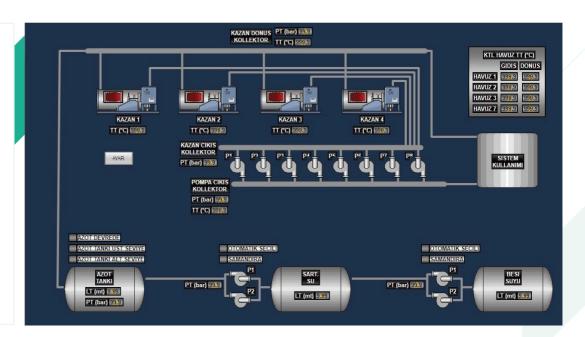
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 Flow rates and chemical dosing are automatically regulated to ensure optimal process efficiency and consistency.

2

Boiler Automation

Boiler automation ensures the efficient, safe, and sustainable management of industrial energy production and thermal processing. SCADA and PLC systems monitor parameters such as temperature, pressure, and fuel level to optimize energy generation and enhance system efficiency. Additionally, automation ensures safe boiler operation while minimizing environmental impact.



Automation Stages

Temperature and Pressure Control

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 In boilers, temperature and pressure are continuously monitored by the SCADA system and automatically regulated by the PLC system. These parameters are maintained within defined limits to ensure efficient energy generation.

Efficiency and Energy Management

3.

 Boiler efficiency is continuously monitored and optimized based on temperature, pressure, and fuel parameters. SCADA tracks energy consumption of fans, pumps, and other equipment, minimizing unnecessary energy use.

Data Collection and Reporting

5.

 The SCADA system collects comprehensive boiler performance data and generates analytical reports. These reports are used to monitor performance trends and support energy efficiency improvements.

Fuel Management and Control

2.

 The boiler's fuel level, type, and consumption are monitored via the SCADA system. Automatic fuel dosing systems regulate the fuel supply to maximize energy production efficiency.

Safety Systems and Alarm Management

4.

 Safety is a top priority in boiler automation. SCADA detects hazardous conditions such as excessive temperature or low pressure and issues alarms to notify operators. If any anomaly is detected, the system automatically transitions to a safe shutdown mode.





Verification

Certification



Verification

Certification



Verification

Certification







Automation Systems

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