



Innovative Technologies

Intelligent Engineering



4A ENGINEERING

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COMPANY POLICY

Employee satisfaction that is the biggest wealth of our company is the basis of our customer satisfaction policy.

We stand behind our solutions with confidence for many years based on our engineering approach with the most appropriate, cost efficient and business excellence of the highest performance.

Continuous development, improvement and education are the priority of our company to follow the technology and innovation.

It is our main principle to continue our activities in energy field with emphasis to the field of renewable energy sources while keeping in mind environmental awareness.



QUALITY POLICY

As 4A Engineering and Technology Limited we consider that every product manufactured and every service provided has to fulfill customer satisfaction as the most important factor. For this purpose the following have been identified as our quality policy:

- Ω To stand behind our products and services
- Ω To gain the trust of our customers
- Ω To understand customer requests, needs and to perform the necessary works to meet them
- Ω To improve the quality of the products by providing peaceful and secure environment for the employees
- Ω To keep our promises to our customers and employees



HEALTH AND SAFETY POLICY

4A Engineering and Technology Limited is committed to;

- Ω Detect and eliminate the possible causes of occupational diseases and work accidents in all possible working environments that our employees are in
- Ω Provide necessary resources by fully complying to current regulations and all kinds of requirements to ensure the health and security of our employees, subcontractors, visitors and field personnel
- Ω Educate the employees to continuously make better and improve the performance of HSE management system and to instill the HSE awareness
- Ω Continue to work on to maintain the value added to develop the health and safety criteria by intelligent engineering applications in the solutions provided and by pioneering the technological innovations in the sector



The background of the page features a light gray, semi-transparent illustration of a power grid. It consists of several tall utility poles of varying heights and orientations, connected by a network of thin, intersecting lines representing power lines. The overall aesthetic is clean and technical, with a focus on the infrastructure of the power industry.

FIELDS OF ACTIVITIES

Power Generation
Power Transmission
Power Distribution
Industrial Plants
Infrastructure





GÖKRES 2 WPP
Manisa, Turkey / 2013

Power Generation

4A ENGINEERING has successfully accomplished concrete and advanced solutions in Power Generation plants. Activities in this field has been diversified in a short time and has reached a high level of technical wealth.

Our field of activities that has started with thermal, geothermal and hydro plants also incorporated wind power plants in recent years. In parallel with improving advanced technologies, necessary capabilities to serve for solar, biomass, nuclear and other alternative energy resources has been reached.

Our activities in Power Plants:

- Ω Generator protection and control systems
- Ω Synchronization systems
- Ω Generator excitation systems
- Ω Instrumentation and recording systems
- Ω DCS / SCADA systems
- Ω HV, MV, LV and auxiliary services



Karkey Powerships
İstanbul, Turkey / 2012, 2014



Antalya Power Plant
Antalya, Turkey / 2007



TEİAŞ Altınkaya 380kV SS
Samsun, Turkey / 2013

Power Transmission

We manufacture both conventional systems and high technology systems in the field of high voltage transmission lines and high voltage substations and also serve the industry with adequate products and services.

Our company has proven experience and reputation in 132kV up to 750kV transmission systems in both local and international projects.

- Ω Transformer substations protection, metering and control systems design and manufacturing
- Ω Transformer substations automation and SCADA applications
- Ω Transmission lines special protection and communication systems (SPS, RAS, EAS)
- Ω Transmission lines insulators, arresters and special line hardware sales
- Ω Transformer substations secondary and primary design, engineering and consultancy services
- Ω High voltage compensation and power quality systems (FACTS)
- Ω Wide area protection and control solutions
- Ω Digital communication solutions over power transmission lines
- Ω Turnkey transformer substations and transmission lines



TEİAŞ Seydişehir 380 kV SS
Konya, Turkey / 2008



Konya Industrial Zone
Konya, Turkey / 2008, 2013

Power Distribution

Our expertise in the field of high voltage technologies is serving as a huge resource for developing electricity distribution system requirements and network reliability, continuity and improved power quality requirements.

Our aim, to be the pioneer of innovative solutions in 1kV – 132kV distribution systems has resulted as being the provider of diversified solutions in the market. Searching to meet the need for smarter and more efficient distribution system design has been addressing our company.

- Ω Special distribution protection and control systems (closed ring, mesh network applications)
- Ω Feeder automation
- Ω Distribution Management System (DMS)
- Ω Underground cable and overhead line faulted circuit indicators
- Ω Distribution system specific communication solutions (PLC, Radio)
- Ω Power quality measurement products and systems
- Ω Metering automation (AMR)
- Ω Overhead line automatic recloser solutions
- Ω Compensation and energy quality systems
- Ω Mobile and compact transformer/distribution substation solutions



KCETAS Distribution Utility
Kayseri, Turkey / 2008



İzmir Atatürk Industrial Zone
İzmir, Turkey / 2006



Industrial Plants

Industrial plants that are the biggest consumers of energy have always been the target group for 4A ENGINEERING, because critical industrial plants shall utilize easily operated and intelligent systems implemented as a result of high reliability and efficiency needs.

- Ω Refineries and oil plants
- Ω Iron and steel plants
- Ω Chemical and petrochemical plants
- Ω Cement plants
- Ω Oil and natural gas pipelines
- Ω Mining
- Ω Pharmaceuticals
- Ω Marine and shipyards
- Ω Pulp and paper, plastics industry
- Ω Automotive
- Ω Textile





Turkish State Railways
Adana, Turkey / 2013

Infrastructure

4A ENGINEERING serves solutions and products to various infrastructure systems such as railway and metro systems, airports, universities, hospitals, desalination, water and waste water treatment systems, centralized gas and heat distribution systems.

- Ω Emergency generator systems, automatic control and synchronization
- Ω Reliable electrical distribution systems for airports
- Ω Intelligent automation solutions for large buildings
- Ω Wide area data communication solutions
- Ω Infrastructure remote monitoring, control and SCADA systems
- Ω Crew management systems



UMM QASR Port
Basra, Iraq / 2012



Turkish State Railways
Sivas, Turkey / 2013





SOLUTIONS AND SERVICES

Power Systems Engineering and Consultancy

Protection and Automation Systems

Panelboard Manufacturing

Turnkey Projects

Product Sales and Technical Support

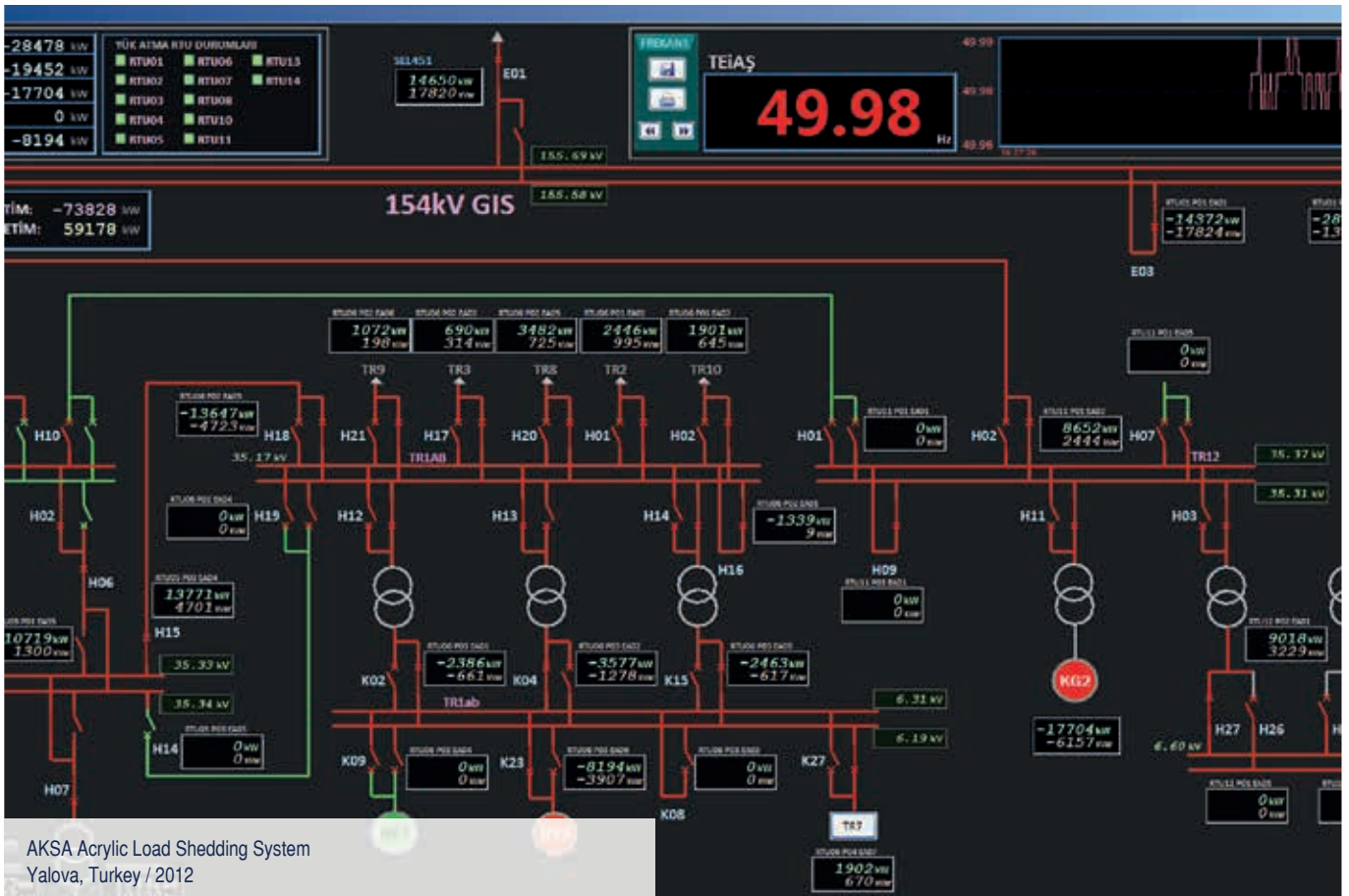
Power Management Systems

SCADA/DMS/DCS/EMS

Power Systems Communication

Services, Testing and Commissioning



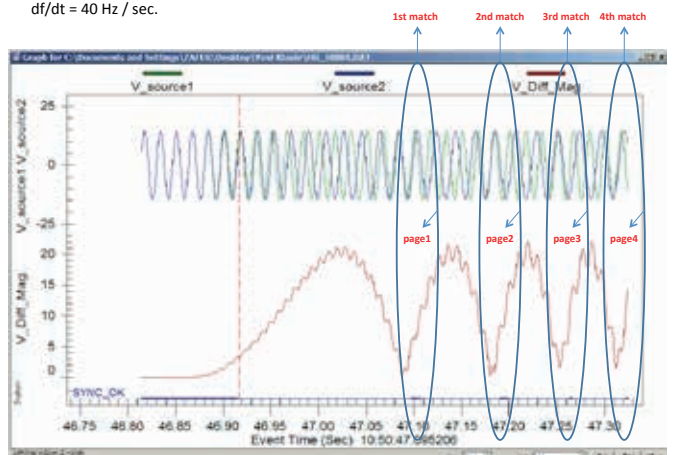


Power Systems Engineering and Consultancy

4A ENGINEERING has been serving below engineering services to the market for several years.

- Ω Short circuit studies
- Ω Load flow studies
- Ω Voltage drop, load and loss calculations
- Ω Protection coordination and selectivity studies
- Ω Transient stability analysis
- Ω Compensation studies
- Ω CT/VT adequacy calculations
- Ω Earthing calculations
- Ω Substation engineering and design

frequency ramp down test: 60Hz to 40Hz in 0.5 Sec
df/dt = 40 Hz / sec.





AKSA Acrylic Generator Protection & Synchronization System
Yalova, Turkey / 2014

Protection and Automation Systems

4A ENGINEERING, as a result of its 20 years experience and expertise, designs, manufactures and executes protection and energy automation systems especially in high voltage and medium voltage systems.

In this field, the company is not only the follower of the innovative technologies that goes to the extend of digital transformer substation automation systems, but the pioneer in implementation and design.

- Ω High voltage line, transformer, capacitor, busbar and breaker failure systems
- Ω Event and fault recorders
- Ω IEC61850 based digital substation control and protection systems
- Ω Generator protection and synchronization systems
- Ω Distribution systems feeder protection and selective protection systems
- Ω Distributed architecture fast metering, protection and control systems
- Ω Motor protection systems



TEİAŞ 380 kV Busbar Protection
İzmit, Turkey / 2008



GÖKRES 2 WPP 154 kV SS
Manisa, Turkey / 2013



4A Electrical Panel Manufacturing
İstanbul, Turkey / 2014

Panelboard Manufacturing

4A ENGINEERING, utilizing its fully equipped 700m² manufacturing facility is capable to supply the required LV & MV solutions for all needs.

- Ω Type tested Low Voltage (LV) Main Switchboard and Sub Distribution boards
- Ω Fixed or withdrawable MCC panelboards
- Ω Protection panelboards,
- Ω Automation (RTU, PLC etc) panelboards
- Ω Control panelboards
- Ω Auxiliary services panelboards
- Ω Marshalling Kiosks
- Ω Special (AVR, Synchronization, local SCADA etc) panelboards



TEİAŞ Borçka 380kV SS
Artvin, Turkey / 2013



4A Electrical Panel Manufacturing
İstanbul, Turkey / 2014



AKSA Acrylic / AKSA Akriklik
Yalova, Turkey / 2013

Turnkey Projects

4A ENGINEERING has been serving turnkey solutions to the market for several years.

- Ω Energy automation and SCADA systems
- Ω High voltage and medium voltage protection and control systems
- Ω Turn key protection and control systems for power plants and transformer substations
- Ω Metro and railway automation systems
- Ω Generator synchronization and excitation systems
- Ω Hydro and wind power plants electrical systems
- Ω Special protection and control applications
- Ω Turnkey substations



Turkish State Railways
Adana, Turkey / 2014



UMM QASR Port
Basra, Iraq / 2012



Powerships Protection and Automation Systems
Istanbul, Turkey / 2015

Product Sales and Technical Support

4A ENGINEERING has been performing sales and marketing activities of unique products from reputable brands and also provide technical support for these products that comes from the industry expertise and technical capabilities.

- Ω High voltage protection relays
- Ω Energy automation products
- Ω Communication products for electrical systems
- Ω Transmission line insulators and substation arresters
- Ω Energy automation software
- Ω Power quality analysers and compensation products
- Ω SF6 gas handling devices



TEİAŞ Special Protection Systems
Elaziğ, Turkey / 2013



Nigeria Substations
Nigeria / 2010



AKSA Acrylic SCADA System
Yalova, Turkey / 2014

Power Management Systems

4A ENGINEERING has been designing and executing highly technological power management solutions based on the technological background and intelligent engineering capabilities of the company.

- Ω Generator load shedding systems
- Ω Synchronous generators power management systems (load sharing, automatic switching, etc.)
- Ω MV motor busbars Fast Transfer Schemes
- Ω Demand control systems
- Ω Special protection and control systems
- Ω Wide area protection, metering and control systems
- Ω Automatic generator control systems
- Ω MV/HV automatic VAR optimization and control systems



AKSA Acrylic High Speed Motor Bus Transfer System
Yalova, Turkey / 2013



Cimpor 154 kV SAS
Ankara, Turkey / 2009



Istanbul Metro SCADA System
Istanbul, Turkey / 2008

SCADA/DMS/DCS/EMS

4A ENGINEERING, with the developing technologies and the widely usage of digital devices, designs and implements modern SCADA systems. Aims continuous improvement and progress especially in power generation, transmission and distribution SCADA systems.

- Ω Transformer substations SCADA/HMI applications
- Ω Unattended substation featured SCADA applications
- Ω Dynamic electrical and communications visualization
- Ω Energy reports, trends, event and fault records
- Ω Operator authorization and user operations records
- Ω Distribution Management System specific software and functions
- Ω Distributed Control System applications (DCS)
- Ω Energy Management Systems (EMS)
- Ω Automatic remote meter reading systems



Konya Ind. Zone SCADA
Konya, Turkey / 2014



AKSA Akrilik SCADA System
Yalova, Turkey / 2015



Çamseki WPP 154 kV SS
Çanakkale, Turkey / 2011

Power Systems Communication

4A ENGINEERING has the capability and the expertise of handling the advanced communication requirements of power systems and this is an important business segment for 4A ELEKTRİK. Communication solutions in energy industry requires deep knowledge of communication systems background.

- Ω Teleinformation systems – RTU – Load dispatch center systems
- Ω SDH, PDH, MUX applications
- Ω Leased lines
- Ω DSL network data transfer
- Ω Radio communications
- Ω GSM/GPRS/3G network remote communications systems
- Ω Communication through power line carriers, PLC
- Ω Optical fiber networks
- Ω Voice and image transfer systems
- Ω Special signalisation and protection communication
- Ω Encrypted, secure communication and networks
- Ω Wireless communication Wi-Fi, Radiolink, Microwave, Wi-Max



GÖKRES 2 WPP RTU and Communication
Manisa, Turkey / 2013



TEİAŞ Special Protection Systems
Erzurum, Turkey / 2013



Balıkesir Ind. Zone 154kV SS
Balıkesir, Turkey / 2011

Services, Testing and Commissioning

4A ENGINEERING is a company who is capable of providing all site services, factory tests and site acceptance test services for all the products sold and all turnkey systems executed totally in house as well as providing site services, test and commissioning services to third parties for both local and international projects.

- Ω Test and commissioning services for protection relays
- Ω Transformer substations secondary and primary site tests
- Ω Relay parameterizing and programming
- Ω Secondary and primary injection tests
- Ω Pre-commissioning
- Ω End-to-end extended relay tests
- Ω Point-to-point communication tests
- Ω Commissioning and energizing
- Ω Site installation and cabling services
- Ω Optical fiber installations
- Ω Special simulation tests
- Ω Factory and site acceptance tests



Embakasi 220 kV SS
Nairobi, Kenya / 2013



TEİAŞ Special Protection Systems
Samsun, Turkey / 2013





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