alfess

ALFESS INDUSTRIAL

Your partner for industrial facilities.



Visit Our Website
www.alfesselectric.com

Contents

01	Introduction
02	About Us
03	Vision & Mission
04	Why Alfess Industrial?
05	Our Services
06	High-Voltage Operations Responsibility
09	Transformer & Switchgear Maintenance
11	LV & Compensation Panels
13	Earthing & Lightning Protection Testing, Internal Installation Inspection
15	Power Quality Measurement
16	Energy Monitoring Systems
19	IT Systems
21	Machine Automation
25	Electrical Contracting & Engineering
28	Alfess Academy
32	Alfess Vision
34	References
36	Contact Us

About Us

ALFESS is an engineering organisation of innovative engineers who share one goal: to carry industry, production and engineering into the future, guided by the principle “Every factory is a fortress.” Our commitment is to develop the sustainable, reliable and smart solutions that industry needs.

From HV/LV maintenance and operations responsibility to measurement, reporting and improvement, we manage every process in a standardised and traceable way. Our goal: lower risk, fewer outages and higher efficiency.

alfess

Visit Our Website
www.alfesselectric.com



Our Vision & Mission

Vision

To be the engineering partner of choice in maintenance, measurement and energy management, making the energy infrastructure of industrial facilities safe, sustainable and measurable.

Mission

To manage HV/LV maintenance, measurement and reporting in a standardised, traceable way; reducing risk, cutting downtime and delivering measurable efficiency to our customers.

Visit Our Website
www.alfesselectric.com

Why Alfess Industrial?

System-Focused Approach

Not one-off fixes: we build sustainable standards.

Engineering in the Field

We measure, analyse and deliver actionable results.

People & Technology

A strong team and measurement infrastructure for accurate diagnosis.

Safety & Quality First

Health, safety and quality are at the core of every process.

Transparent Process

Regular reporting and records ensure full traceability.

Future-Ready Outlook

A culture of monitoring and improvement for long-term efficiency.

Visit Our Website
www.alfesselectric.com

Our Services

1.HV Operations Responsibility

2.Transformer & Switchgear Maintenance

3.LV & Compensation Panel Maintenance

4.Earthing, Lightning Protection & Installation Inspection

5.Power Quality Measurement

6.Energy Monitoring Systems

7.IT Systems

8.Machine Automation

9.Electrical Engineering & Contracting

10.Alfess Academy

1.HV Operations Responsibility Service

Facilities supplied at 1 kV and above require a qualified person responsible for high-voltage operation. This role can be filled by a certified electrical engineer employed on site or through external consultancy.

Alfess Industrial provides end-to-end HV operations responsibility services so that high-voltage installations run safely, sustainably and in full compliance with regulations.



Visit Our Website
www.alfesselectric.com

Scope of Service

- Creating, completing and maintaining the HV operations file
- Preparing HV instructions, guidelines and operating procedures
- Creating HV intervention and switching forms
- Consulting and compliance tracking for PPE (Personal Protective Equipment)
- Checking and tracking HV work authorisations and health certificates
- Monthly periodic site visits and inspection reports
- Hands-on HV switching training
- Physical participation in HV switching operations
- Representation with utilities, industrial-zone authorities and official inspections

Visit Our Website
www.alfesselectric.com



Legal & Technical Importance

- Facilities without an HV operations manager may face **major non-conformities** during inspections.
- If an HV accident occurs without an operations manager, expert reports may hold the facility fully liable.
- Utilities and industrial-zone authorities require the HV operations manager’s signature for many procedures.
- The HV Operations Manager is a formally registered role under the applicable regulations.

“Your facility becomes fully compliant in terms of health, safety and operations.”

Visit Our Website
www.alfesselectric.com

2.Transformer & Switchgear Maintenance Services

Transformer and switchgear maintenance is critical for continuity, safety and energy efficiency. As the heart of every industrial facility, they need periodic maintenance to catch faults early and prevent downtime and damage.



Benefits After Maintenance

- Reduced risk of faults and fire
- Stronger production continuity
- Prevention of energy losses
- Longer equipment life
- Detailed reporting with measurement & test results



Transformer & Switchgear

Maintenance Scope

Transformer

- Insulation resistance measurement
- Turns ratio test
- Primary–secondary winding resistance
- Cable & busbar connection checks
- General transformer cleaning
- Transformer oil analysis

Switchgear

- Circuit breaker open–close time measurement
- Contact resistance measurement
- Relay tests
- Current transformer tests
- General switchgear cleaning

Visit Our Website
www.alfesselectric.com

3.LV & Compensation Panel Services

LV panel maintenance is essential to reduce fire risk, keep production running and lower costs.

Loose connections, contaminated equipment and untested protection devices create fault and safety risks.

Periodic inspections detect overheating and energy losses early, so action is taken before faults occur.



Visit Our Website
www.alfesselectric.com

LV & Compensation Panel Services

Scope of Service

- Contact resistance measurement
- Residual current device (RCD) tests
- Capacitor capacity tests
- Thermal imaging inside panels
- General panel cleaning

Key Benefits

- Reduced risk of fire and electrical faults
- Prevention of unplanned downtime
- Avoidance of energy losses and penalties
- Longer panel and equipment life
- **Detailed reporting** with measurements, tests and thermal images

Visit Our Website
www.alfesselectric.com

4.Earthing, Lightning & Installation Inspection

Correctly functioning earthing and lightning protection systems are vital for the safety of people and property in electrical installations. Regular measurements keep your facility protected.

Scope of Service

- Earthing measurement
- Lightning protection measurement
- Internal installation compliance check

Key Benefits

- Greater safety for people and property
- Reduced risk of electric shock and fire
- Full compliance with regulations and inspections
- Supports efficient, healthy equipment operation
- Official, detailed reporting

Visit Our Website
www.alfesselectric.com

“Measurements are carried out with calibrated instruments in line with the relevant standards and regulations; improvement recommendations are provided based on the results.”



Visit Our Website
www.alfesselectric.com

5.Power Quality Measurement

Power quality measurement covers measuring, analysing and reporting power quality parameters to identify electrical problems in your facility.

Scope of Service

- Voltage, current, frequency and power measurements
- Harmonic and interharmonic analysis (THD)
- Voltage imbalances and interruption records
- Flicker measurements
- Phase imbalance and load distribution analysis
- Active, reactive and apparent power measurements
- Power factor (cos φ) assessment
- Compliance analysis to EN 50160 and related standards
- Reporting of results and technical assessment

Visit Our Website
www.alfesselectric.com

6.Energy Monitoring Systems

Energy monitoring systems measure, monitor, analyse and report electrical energy in facilities, keeping both fault risks and energy costs under control. Real-time data reveals problems before they occur, so efficiency work is built on reliable data.

Energy Management & Risk Control

- Fault & Risk Detection
- Energy Efficiency & Management
- ISO 50001 & Carbon Footprint



6.Energy Monitoring Systems

Fault & Risk Detection

With energy monitoring systems:

- Voltage fluctuations are monitored.
- Unbalanced phase loads are detected.
- Harmonic levels are analysed.
- Sudden power outages are recorded and reported.
- Energy use is tracked per equipment and facility.

*Result: Faults are seen before they happen; unplanned downtime is minimised.

Energy Efficiency & Management

With the system:

- Consumption is analysed in detail.
- Losses and leakages are identified.
- Energy saving potential is revealed.
- Energy Performance Indicators (EnPI) are created.

*Result: Measurable, traceable and sustainable energy management.

ISO 50001 & Carbon Footprint

- Energy monitoring infrastructure compliant with ISO 50001
- Data structure ready for carbon footprint analysis
- Direct contribution to sustainability and digitalisation goals

*Result: Future-ready facilities aligned with international standards.

Digitalisation & Case Study

Sector: Defence
Need: Energy tracking under ISO 50001

Implementation

- 30 energy analysers
- Powercenter software platform
- Fibre & network infrastructure

Results

- Accuracy of energy consumption per product raised to 99%
- Reliable, accurate data infrastructure for efficiency work



Visit Our Website
www.alfesselectric.com

7.IT Systems (Data & Fibre Infrastructure)

A strong, well-organised data infrastructure is fundamental for uninterrupted communication, high performance and system security. Poorly planned or non-standard infrastructure leads to speed losses, dropped connections and operational inefficiency.

At Alfess Industrial we deliver data and fibre infrastructure with an organised, labelled and sustainable architecture that meets international standards. Your infrastructure works efficiently today and is ready for future growth and expansion.



Visit Our Website
www.alfesselectric.com

IT Systems

Scope of Service

- Fibre termination
- Fibre splicing
- CAT6 / CAT6A cable termination
- IT cabinet organisation
- Patch panel installation and labelling
- Data & fibre infrastructure projects

Key Benefits

- High-speed, stable network infrastructure
- Fewer faults and connection problems
- Organised, manageable IT cabinets
- Time savings in maintenance and interventions
- Standards-compliant, labelled and documented infrastructure



8.Machine Automation

Control *Safety* *Performance* *Digital* *Sustainability*

Machine automation ensures that production and process systems are managed in a controlled, safe and efficient way.

Well-planned automation solutions reduce manual intervention and create a standardised, traceable and sustainable production infrastructure.



Visit Our Website
www.alfesselectric.com

Machine Automation
Why It Matters

Production Efficiency

- Keeps processes running continuously and stably.
- Increases production speed and capacity utilisation.
- Creates repeatable, standardised production conditions.

Quality & Continuity

- Minimises human error.
- Ensures consistent product and process quality.
- Prevents unplanned downtime.

Flexibility & Scale

- Adapts quickly to different production scenarios.
- Suitable for revising and expanding existing systems.
- Lays the foundation for future digital investments.

Workplace Safety

- Reduces the need for operators in hazardous areas.
- Prevents accidents with emergency stop and safety scenarios.
- Ensures compliance with health and safety standards.

Cost Advantage

- Reduces raw material and energy losses.
- Lowers maintenance and repair costs.
- Optimises operating costs in the long term.

Digital Traceability

- Enables real-time monitoring of process data.
- Provides reporting and analysis.
- Supports data-driven decision making.

Machine Automation
Case Study -1

Sector: Mining & Geochemistry Laboratory
Need: Fusion Furnace Automation Revision (4 Units)

In fusion furnaces used for mining and geochemical analysis, process safety, temperature precision and repeatability are critical. As the existing automation could no longer meet requirements, the system was revised.

Scope

- Analysis of the existing automation infrastructure
- Redesign of control and safety scenarios
- Improved temperature control precision
- Minimised operator intervention

Results

- Higher process stability
- Fast fault detection
- Consistent measurement and analysis results
- Fewer operator-related errors
- Safe, sustainable production infrastructure

Machine Automation
Case Study -2

Sector: Defence Industry
Need: Radar Equipment Freight Lift Automation Revision

Hydraulic lift systems in defence facilities demand high safety, controlled movement and uninterrupted operation. The existing automation infrastructure was revised accordingly.

Scope

- Renewal of the radar freight lift control system
- Updated safety and interlocking scenarios
- Automation software and hardware revision
- System tests and commissioning

Results

- Increased system safety
- Controlled, stable operation
- Reduced fault risks
- Compliance with defence industry standards

9.Electrical Contracting & Engineering

With the right engineering:

- Investment costs are optimised.
- Risks during implementation are minimised.
- Operational continuity is secured.

We deliver turnkey electrical contracting services covering every step from site survey to commissioning.



Scope of Service

- **Electrical Engineering (LV – HV)**
  - Lighting Design
  - Socket & Power Installation Design
  - Cable Tray Layout Design
  - Low-Current Systems Design
  - Earthing & Lightning Protection Design
  - Power Single-Line Diagrams
  - Panel Layout & Supply Design
  - Energy Monitoring Design
  - Facility HV Projects
- **Site survey, quantity take-off and design**
- **Alternative product and solution proposals**
- **Panel manufacturing and site installation**
- **Cabling and installation work**
- **Testing, commissioning and handover**

Visit Our Website
www.alfesselectric.com

Reference Projects

Mining & Geochemistry Laboratory

Electrical contracting, engineering and commissioning for a new factory

Damper Factory

Electrical infrastructure contracting and engineering for a new factory

Recycling Factory

Electrical engineering, site installation and commissioning for a new facility

Snack Factory

Electrical infrastructure and system installation for a new production line

Defence Industry

New office electrical infrastructure, low-current and system installation



10.Alfess Academy

“Learn the Theory, Apply It On Site”

- Hands-on, one-to-one training under real field conditions.
- Training takes place at your facility, tailored to your infrastructure.
- Content designed specifically for industrial and production facilities.
- No limit on the number of participants.
- Our training scope is continuously updated to meet industry needs. Contact us for the latest training content.



Alfess Academy
Training Packages

HV Operations Management Training

- Duties of the HV Operations Manager
- Instructions, Guidelines, PPE Regulations and Documentation Processes
- Hands-on Switching Training
- General Energy Continuity and Fault Training

Transformer Testing & Maintenance

- General Structure and Types of Transformers
- Transformer Fault Types and Causes
- Hands-on Transformer Tests on Site

Electrical Safety at Work Health & Safety Training

- Basic Health & Safety Training
- Precautions for Electrical Work
- Safety and Hazardous Areas in Electrical Installations

Visit Our Website
www.alfesselectric.com

Training Packages

Switchgear Testing & Maintenance

- Structure of Modular HV Switchgear
- Hands-on Switchgear Tests on Site

Lighting Systems

- Material Selection and Design with DIALux
- Efficient Lighting Systems
- Feasibility Studies with Lighting Products

Basic Automation Training for Maintenance Teams

- (SIEMENS) PLC–HMI General Structure
- System Back-Up
- Program Intervention
- Fault Detection

Basic Training for Electrical Maintenance Teams

- Basic Maintenance Training for the Plant's Electrical Maintenance Unit
- Fault Detection Process and Management
- Maintenance, Fault and Documentation Processes
- Maintenance and Asset Management
- Digitalisation of Processes

IT Systems Training

- Introduction to IT Cabinet Components
- IT Cabinet Organisation
- Cat Cable Termination
- Fibre Optic Cable Termination
- Fibre Optic Splicing

Training Packages

Maintenance Management Training

- Definition and Importance of Maintenance
- Types of Maintenance
- Maintenance Planning Processes
- Systems Used in Maintenance Management

TPM (Total Productive Maintenance)

- What is TPM?
- Goals of TPM
- The 8 Pillars of TPM
- TPM Implementation Steps

OEE (Overall Equipment Effectiveness)

- OEE Definition
- OEE Components
- OEE Loss Types

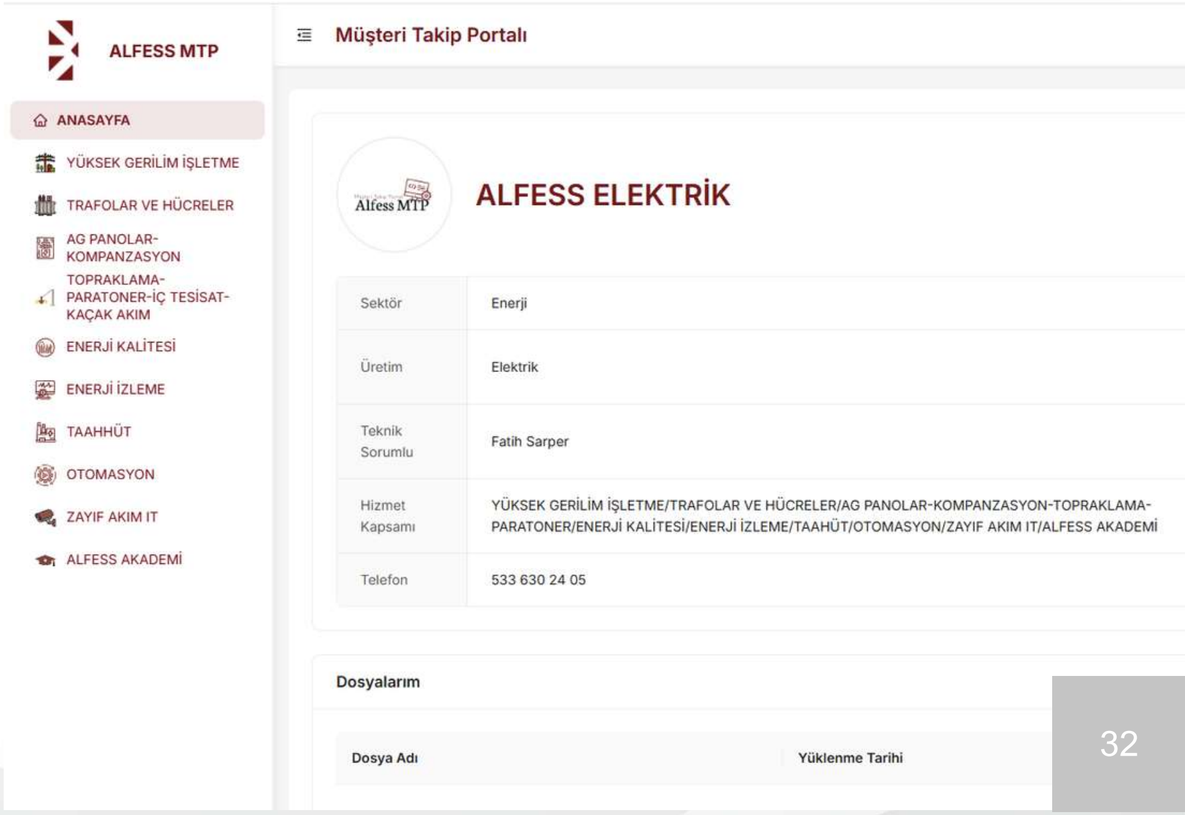
Performance Tracking & Reporting

- KPI Definition
  - MTTR, MTBF, OEE
- Reporting Techniques

11. ALFESS VISION CUSTOMER PLATFORM

Alfess Vision is our own platform that brings every maintenance process together, so customers can follow their maintenance from start to finish with complete transparency.

It eliminates paperwork and stands out for easy access, transparent maintenance processes and open access for everyone responsible in the facility, not just one person.



Visit Our Website
www.alfesselectric.com

With Alfess Vision

ALL SERVICES AT YOUR FINGERTIPS

Via www.alfessmtp.com, customers log in to the portal with their personal username and password and get instant access to their maintenance processes and facility maintenance records.

- *High-Voltage Operations*
- *Energy Monitoring*
- *Transformers & Switchgear*
- *Contracting*
- *LV Panels & Compensation*
- *Automation*
- *Earthing, Lightning Protection, Installation & RCD*
- *Low-Current & IT*
- *Power Quality*
- *Alfess Academy*

Visit Our Website
www.alfesselectric.com

Our References

aselsan ROKETSAN HAVELSAN BMC POWER nurol MAKİNA MAN

[yatas] GROUP AKO abdulkadir özcan FIRAT MAKİM akdas PATIS FOOD GROUP Superior Ingredients, Innovative Creations

Kontrolmatik Technologies iBA Powder Coatings centurion mikropor SGS ITC

Visit Our Website
www.alfesselectric.com

Our References

MAPEI

YDS

DMT PREFABRICATED BUILDINGS

DOĞUŞ

ankara un

HST OTOMOTİV İMALAT SAN. VE TİC.LTD.ŞTİ.

elemental geri dönüşüm a.ş.

UTEST MATERIAL TESTING EQUIPMENT

MFA

KARAKAYA "1954'ten günümüze"

ODTÜ

T.C. SAYIŞTAY 1862

TURKCELL

TCMB

tts TURKTIPSAN PHARMACEUTICALS

TCDD

MKE

Visit Our Website
www.alfesselectric.com

Get in Touch

Phone
+90 533 363 2405

Email
info@alfesselectric.com

Address
Balgat Mahallesi, 1408 Sokak, No:3/11
Çankaya, Ankara, Türkiye

Website
www.alfesselectric.com



We measure, manage and safeguard energy.

Visit Our Website
www.alfesselectric.com