ATCE®
ENERJİ

www.atceenerji.com

We Bring the Energy of Anatolia to the World...

ATCE ENERJİ OTOMASYON VE PANO İMALATI SAN. TİC. A.Ş.

ATCE ENERJİ A.Ş. carries out electrical board manufacturing and contracting works in the electricity distribution and transmission sector with its competent engineering staff with over 20 years of experience in the fields of power systems, automation, communication and electrotechnics.
It operates on a total area of 8000 m², 6000 m² of which is closed area, in Elazığ Organized Industrial Zone.

MISSION

To provide service with a quality, fast, reliable and environmentally friendly approach, with its competent technical staff, at every stage of the energy sector, from production to transmission, from transmission to distribution.

VISION

To be one of the leading energy companies in Turkey and one of the leading energy companies on an international scale in terms of quality, advanced technology and reliability, focused on creating value with customers, employees and business partners.

OUR VALUES

- Professional
- Trustworthy
- Customer-Focused
- Staff-Focused
- Production of Quality
- Nature-Conscious
- Growing and Developer

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ATCE®
ENERJİ
Big Projects
Need Big Power!
Some of
Our Commitment
References
TEİAŞ
ENERJİSA
Türkiye'nin Enerjisi
Eczacıbaşı
EKSİM
YATIRIM HOLDING
ETİMADEN
DSİ

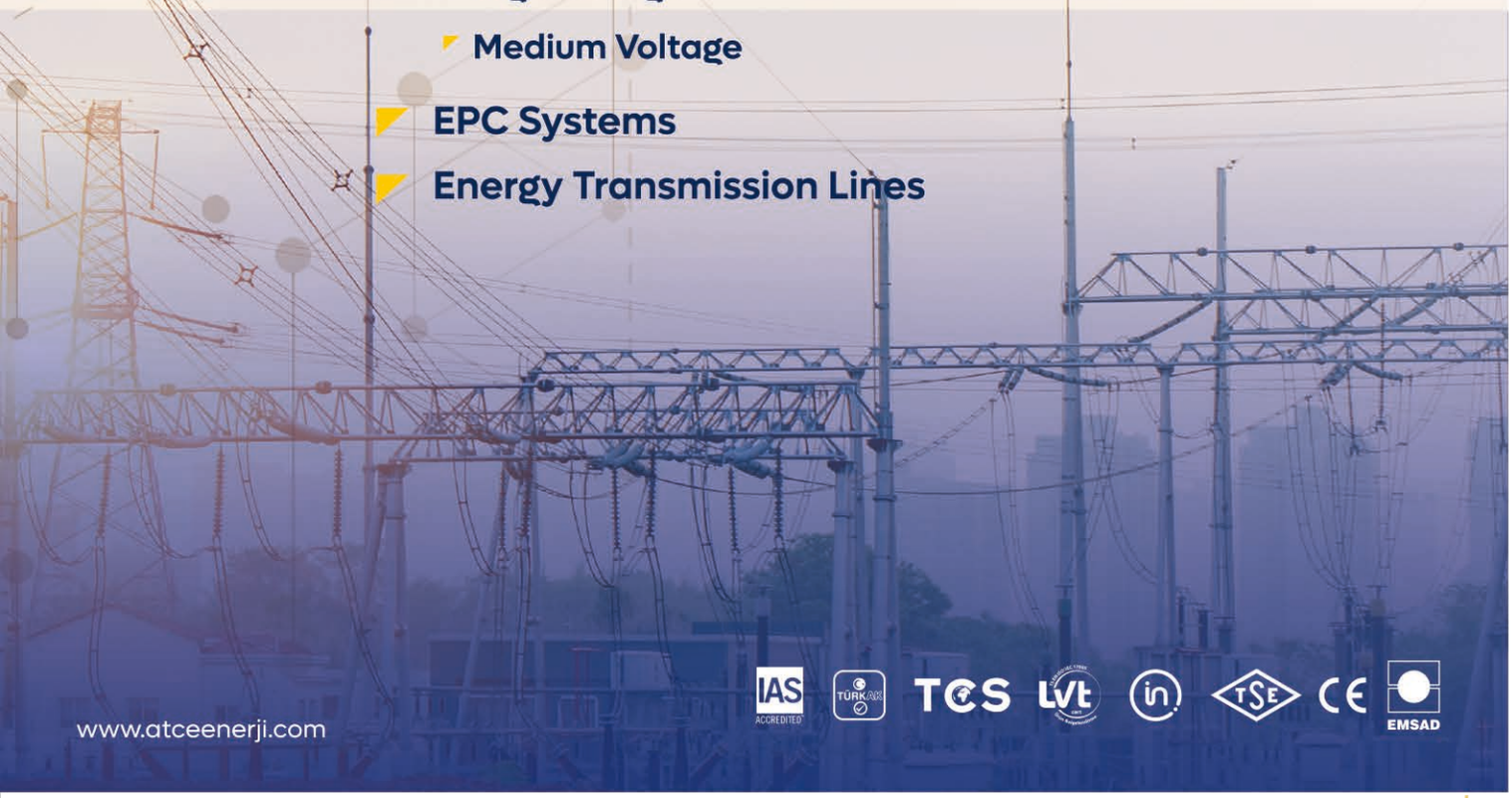
ATCE ENERJİ'S HAS ITS SIGNATURE IN THE LEADING CONTRACTING PROJECTS OF TURKEY!

ATCE ENERJİ A.Ş. contracting group started its activities in the field of Electricity Transmission and Distribution in 2000 and has managed to become one of the most sought-after brands in the sector by successfully completing very big projects in a short time.

In addition to its expert and qualified management team, ATCE ENERJİ A.Ş., which completed the projects it handled in the field with its experienced team perfectly and on time, has signed Turkey's leading contracting projects.

ATCE ENERJİ A.Ş. is one of the leading energy contracting companies in Turkey, which carries out turnkey substations, power transmission-transmission lines and EPC("Engineering Procurement and Construction") projects at very high, high voltage levels.

- **Substations**
  - **Very High Voltage**
  - **High Voltage**
  - **Medium Voltage**
- **EPC Systems**
- **Energy Transmission Lines**



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Some of Our Projects...

ENERGY TRANSMISSION LINES INSTALLED IN TEİAŞ WITHIN THE SCOPE OF INVESTMENT PROJECTS AND CONNECTION AGREEMENTS

PROJECT	CONTRACT	CHARACTERISTICS
400 kV Keban Switchgear-2- Kayseri Capst. North ETL 6328-6348 E. Inter. Private Zone	Commitment	TEİAŞ ETL
154 kV AlaROOF-Urla-Tahtalı 2x1272MCM ETL Installation (70 km)	Commitment	TEİAŞ ETL
154 kV 2x1272 MCM 10 km Göynük TS ETL Installation Work	Commitment	TEİAŞ ETL
3 pieces 154 kV ve 2 pieces 380 kV of ETL installation of Çarşamba Ağcagüney Hey. Reg. Vry.	Commitment	TEİAŞ ETL
15 km 154 kV 1x1272 MCM ETL (Tortum-Ayvalı HEPP)(hydroelectric power plant)	Commitment	TEİAŞ ETL
25 km 154 kV 1x1272 MCM ETL (Tortum-Alanbaşı HEPP)(hydroelectric power plant)	Commitment	TEİAŞ ETL
380 KV Bağıştaş-Keban E.T.L's to Keban 380 TC Connection	Commitment	TEİAŞ ETL
154 Kv Etikrom-Ferrokrom E.T.L. work	Commitment	TEİAŞ ETL
OPGW Supply and Installation to Teiaş 154 kV Ferrokrom-Elazığ 2 E.T.L. (55 Km)	Commitment	TEİAŞ ETL
Bikiltaş Çimento Fabrikası E.T.L Supply and installation work	Commitment	TEİAŞ ETL
154 KV 2*795 MCM Conductor (~1.5km+~2.7 km)Bağıştaş TC Contacts ETL Facility	Commitment	TEİAŞ ETL
Installation of Pole No. 224 of 380 kV Keban Switchgear II -Elbistan Energy Transmission Line	Commitment	TEİAŞ ETL
154 kV Enerjisa-İzmit GIS ETL Installation	Commitment	TEİAŞ ETL
380 kV 2 Km 3B 954 SEYDİŞEHİR-AKSA ETL INSTALLATION	Commitment	TEİAŞ ETL
154 KV 477 MCM Adiyaman Çimento Ps4/b ETL DR45-25 Deplase Facility Installation Work	Commitment	TEİAŞ ETL
154 KV Single Circuit 2 Phase 477 MCM Adıyaman Gölbaşı DDY ETL Deplase Work Between DR6-8	Commitment	TEİAŞ ETL
154 kV Tuzla-İçmeler ETL Şenpiliç Facilities Deplase Work	Commitment	TEİAŞ ETL

SUBSTATIONS INSTALLED WITHIN THE SCOPE OF INVESTMENT PROJECTS AND CONNECTION AGREEMENTS WITH TEİAŞ

PROJECT	CONTRACT	CHARACTERISTICS
154/34.5 kV Özlüce HEPP TC 154 kV Transformer Feeder Addition	Commitment	TEİAŞ TC
154/34,5 kV Göynük Havza TC Installation Work	Commitment	TEİAŞ TC
Seyrantepe HEPP 154 kV Additional Line Feeder Installation	Commitment	TEİAŞ TC
154 kv Zara TC Installation Work	Commitment	TEİAŞ TC
154 KV IZMIT GIS CONTROL BUILDING AND MV METAL CLAD SWITCH RENEWAL WORK 2021	Commitment	TEİAŞ TC

UNDERGROUND POWER CABLE INSTALLED FOR TEİAŞ WITHIN THE SCOPE OF INVESTMENT PROJECTS AND CONNECTION AGREEMENTS

PROJECT	CONTRACT	CHARACTERISTICS
154 kV Underground Power Cable Installation work at 380 kV Çarşamba TV	Commitment	TEİAŞ CABLE

COMMITMENT WORKS WITHIN THE SCOPE OF INVESTMENT PROJECTS AND CONNECTION AGREEMENTS FOR ELECTRICITY DISTRIBUTION COMPANIES

PROJECT	CONTRACT	CHARACTERISTICS
Aydın-Gaziantep-Elazığ Provinces EDAŞ GIS Service Procurement	Commitment	EDAŞ GIS
Fırat-Aydem-Dicle-Kcetaş-Akedaş Edaş Investment Projects Service Procurement Works	Commitment	PROJECT
FIRAT-KCETAŞ-AKEDAŞ-ARAS-DİCLE-GEDİZ-AYDEM-BOĞAZİÇİ-OSMANGAZİ Energy Distribution	Commitment	EDAŞ FACILITY
Over 50 Facility and Maintenance and Repair Works for Companies (Approximately 100 Million USD in Total)		
Aksu HEPP approximately 20 km 34.5 Kv 2x477 and 1X3/0 ETL Facility	Commitment	EDAŞ ETL
Saf-1 HEPP 15km 36 kV 2x477 MCM Etl Facility	Commitment	EDAŞ ETL
Bingöl Province ETL Maintenance and Repair work	Commitment	EDAŞ ETL
Elazığ Province ETL Maintenance and Repair Work	Commitment	EDAŞ ETL
Ekinözü Solar Power Plant and DM Installation	Commitment	EDAŞ ETL
Elazığ-1 Solar Power Plant and DM Installation	Commitment	EDAŞ ETL
Yurtbaşı GES ETL and DM Installation	Commitment	EDAŞ ETL
Malatya Province GES ETL AND DM Installation	Commitment	EDAŞ ETL
6.5 km Route change work between Poles No. 22-42 of Karakaya TC-Çardaklı HEPP ETL	Commitment	EDAŞ ETL
Van Province Atmaca District Silis Solar Energy connection Line (ELİSS ENERJİ LTD.ŞTİ.)	Commitment	EDAŞ ETL
Karaağaç HEPP ETL Installation 2020	Commitment	EDAŞ ETL
Turkish Petroleum TDLYPM-193 Şehit Esma Çevik 20 KM 2X477 MCM ETL Installation Work	Commitment	EDAŞ ETL
Hastarla HEPP ETL Installation Work	Commitment	EDAŞ ETL
Uşak Seramik Solar Power Plant Installation Work	Commitment	EDAŞ ETL

COMMITMENT WORKS FOR ELECTRICITY GENERATION PLANT COMPANIES

PROJECT	CONTRACT	CHARACTERISTICS
Tatar-Pembelik-Gökçeköy-Sekiyaka-Çağlayan-Kiğı-Çardaklı HEPP etc. over 100 LV+MV Elc. Ins.	Commitment	HEPP
Abdulbaki Baş 980 KWe Cap. ON-Grid Photovoltic Solar Power Plant Project	Commitment	EPC

COMMITMENT WORKS FOR INDUSTRIAL FACILITIES

PROJECT	CONTRACT	CHARACTERISTICS
Etikrom A.Ş. 36 kV 3/0 ETL Maintenance and Repair	Commitment	INDUSTRIAL FACILITY
Nasip-Seza etc. over 10 Concrete Batching Plants and Crusher Trnsfrmr. Facilities (Inc.MCC Board)	Commitment	INDUSTRIAL FACILITY
Akdağ Rockwool-Bader Eng.-Ertaş Cal.-Eti Mine Solid Waste etc. 20 Pcs. Factory Electrical Ins.	Commitment	INDUSTRIAL FACILITY
Esan Eczacıbaşı İnlice Stem Cell 2 1600kVA Transformer Addition, MV Line Deplase	Commitment	INDUSTRIAL FACILITY
Efor Gübre A.Ş. Samsun 4x2000 KVA Transformer Facility Installation	Commitment	INDUSTRIAL FACILITY

* Please call us for all the projects and more detailed information.

INDEX

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The products in the "U" series are planned and manufactured with the highest efficiency and optimum cost in accordance with the specifications and projects in line with customer requests and needs.

The product series consists of 6 sub-series: UPO, UPI, UBG, UBO, UBI and USK. The products are offered unequipped in the sizes and specifications required by our customers.

01

U SERIES

UNEQUIPPED SERIES

SERIES	DEFINITION	MECHANIC SYSTEM	SHEET METAL TYPE	SHEET METAL THICKNESS	PAINT	LOCK SYSTEM	IP CODE
UPO	UNEQUIPPED EXTERNAL TYPE BOARDS	STANDARD	GALVANIZED DKP	1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPTIONS	3 POINT	IP 44 IP 54 IP 65 IP 66
UPI	UNEQUIPPED INTERNAL TYPE BOARDS	FULL MODULAR SEMI- MODULAR	GALVANIZED DKP	1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPTIONS	3 POINT 4 POINT	IP 2X IP 42
UBG	UNEQUIPPED EMBEDDED (FLUSH MOUNTED) TYPE BOARDS	STANDARD	GALVANIZED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm	STANDARD RAL 7035 OTHER OPTIONS	1 POINT 2 POINT	IP 2X IP 44
UBO	UNEQUIPPED EXTERNAL TYPE SURFACE MOUNTED BOARDS	STANDARD	GALVANIZED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPTIONS	1 POINT 2 POINT	IP 44
UBI	UNEQUIPPED INTERNAL TYPE SURFACE MOUNTED BOARDS	STANDARD	GALVANIZED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPTIONS	1 POINT 2 POINT	IP 2X IP 4X
USK	UNEQUIPPED SHEET METAL PAVILIONS	STANDARD	GALVANIZED	2-3 mm	STANDARD RAL 7035 OTHER OPTIONS	3 POINT	IP 54

UPO SERIES 1.1

UPO series is a series of boards consisting of external type boards. Unequipped products are offered in the sizes and specifications required by our customers.

EXTERNAL TYPE BOARDS (UNEQUIPPED)

Standing type boards produced for outdoor use.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

SEISMIC RESISTANCE REPORT

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

MODULAR STRUCTURE

	DEFINITION	MECHANIC SYSTEM	SHEET METAL OPTION	SHEET METAL THICKNESS	PAINT OPTIONS	LOCK SYSTEM	IP CODE
UPO SERIES	UNEQUIPPED EXTERNAL TYPE BOARDS	STANDARD	GALVANIZED DKP	1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPTIONS	3 POINT	IP 44 IP54 IP65 IP66
	TECHNICAL DETAILS						
	SCAFFOLD	GATE	BASE	ROOF	REAR-SIDE COVERS	MONTAGE PLATE	COVER SHEET
	1,5 mm 2 mm	1,5 mm 2 mm	2 mm	2 mm	1,5 mm	1,5 mm 2 mm	1,2 mm

1.2 UPI SERIES

UPI series is a series of switchboards consisting of internal type switchboards. The products are offered unequipped in the sizes and specifications required by our customers. Three types of mechanical system options are offered in our internal type boards. Modular, semi-modular and standard type boards are produced according to the demands of our customers. (You can find details about mechanical systems on pages 46-49).

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

SEISMIC RESISTANCE REPORT

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

MODULAR STRUCTURE

INTERNAL TYPE BOARDS (UNEQUIPPED)

Standing type boards produced for indoor use.

	DEFINITION	MECHANIC SYSTEM	SHEET METAL OPTION	SHEET METAL THICKNESS	PAINT OPTIONS	LOCK SYSTEM	IP CODE
UPI SERIES	UNEQUIPPED INTERNAL TYPE BOARDS	MODULAR SEMI-MODULAR	GALVANIZED DKP	1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPTIONS	3 POINT 4 POINT	IP2X IP44
	TECHNICAL DETAILS						
	SCAFFOLD	GATE	BASE	ROOF	REAR-SIDE COVERS	MONTAGE PLATE	COVER SHEET
	1,5 mm 2 mm	1,5 mm 2 mm	2 mm	1,5 mm 2 mm	1 mm 1,2 mm 1,5 mm	1-2 mm Arasında Değerler	1,2 mm 1,5 mm

UBG SERIES 1.3

UBG series is a series of boards consisting of embedded type (flush-mounted) boards. The products are offered without reinforcement in the sizes and specifications required by our customers.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

LASER WELDED

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

EMBEDDED (FLUSH-MOUNTED) TYPE BOARDS (UNEQUIPPED)

These are boards that are mounted embedded in the wall.

UBG SERIES	DEFINITION	MECHANIC SYSTEM	SHEET METAL OPTION	SHEET METAL THICKNESS	PAINT OPTIONS	LOCK SYSTEM	IP CODE
	UNEQUIPPED EMBEDDED (UNDER PLASTER) TYPE BOARDS	STANDARD	GALVANIZED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm	STANDARD RAL 7035 OTHER OPTIONS	1 POINT 2 POINT	IP2X IP44
	TECHNICAL DETAILS						
	SCAFFOLD	COVER	MONTAGE PLATE	COVER SHEET			
	0.8 - 1.5 mm Between Values	1 - 1.5 mm Between Values	0,8 mm 1 mm	0,8 mm 1 mm 1,2 mm			

1.4 UBO SERIES

UBO series is a series of boards consisting of external type surface mounted boards. The products are offered unequipped in the sizes and specifications required by our customers.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

LASER WELDED

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

EXTERNAL TYPE SURFACE MOUNTED BOARDS (UNEQUIPPED)

These are boards produced for outdoor use and mounted on walls, poles, etc. with hanging apparatus.

	DEFINITION	MECHANIC SYSTEM	SHEET METAL OPTION	SHEET METAL THICKNESS	PAINT OPTIONS	LOCK SYSTEM	IP CODE
UBO SERIES	UNEQUIPPED EXTERNAL TYPE SURFACE MOUNTED BOARDS	STANDARd	GALVANIZED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPTIONS	1 POINT 2 POINT	IP44
	TECHNICAL DETAILS						
	SCAFFOLD	COVER	MONTAGE PLATE	COVER SHEET			
	0,8 - 1,5 mm Between Values	1 - 1,5 mm Between Values	0,8 mm 1 mm	0,8-1,5 mm Between Values			

UBI SERIES 1.5

UBI series is a series of boards consisting of internal type surface mounted boards. The products are offered without reinforcement in the sizes and specifications required by our customers.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

LASER WELDED

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

INTERNAL TYPE SURFACE MOUNTED BOARDS (UNEQUIPPED)

These boards are produced for indoor use and mounted on the wall with hanging apparatus.

	DEFINITION	MECHANIC SYSTEM	SHEET METAL OPTION	SHEET METAL THICKNESS	PAINT OPTIONS	LOCK SYSTEM	IP CODE
UBI SERİSİ	UNEQUIPPED EXTERNAL TYPE SURFACE MOUNTED BOARDS	STANDARD	GALVANIZED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPTIONS	1 POINT 2 POINT	IP2X IP4X

TECHNICAL DETAILS						
SCAFFOLD	COVER	MONTAGE PLATE	COVER SHEET			
0,8-1,5 mm Between Values	1-1,5 mm Between Values	0,8 mm 1 mm	0,8-1,2 mm Between Values			

1.6 USK SERIES

USK series is a product series consisting of sheet metal corners. Sheet metal transformer kiosks can be designed and manufactured in desired dimensions depending on the number of medium voltage switching elements. In addition, mobile sheet metal kiosks can be manufactured using trailers, trailers and skids and can be used seasonally for energy needs. They do not require any special permission in terms of transportation and road traffic.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

SHEET METAL KIOSK (UNEQUIPPED)

They are sheet metal cabinets produced in three compartments suiboard for use as a substation and can be sized according to demand.

	DEFINITION	MECHANIC SYSTEM	SHEET METAL OPTION	SHEET METAL THICKNESS	PAINT OPTIONS	LOCK SYSTEM	IP CODE
USK SERİSİ	UNEQUIPPED METAL SHEET KIOSK	STANDARD	GALVANIZED	2 mm 3 mm	STANDARD RAL 7035 OTHER OPT.	3 POINT	IP54
	TECHNICAL DETAILS						
	SCAFFOLD	GATE	BASE	ROOF	REAR-SIDE COVERS		
	2 mm	2 mm	3 mm	2 mm	2 mm		

Anatolian signature in electricity...

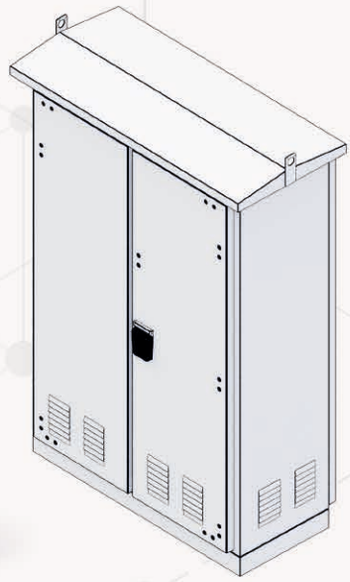
The products in the E series are planned and manufactured with the highest efficiency and optimum cost in accordance with the specifications and projects in line with customer requests and needs.

The product series consists of 5 sub-series: EPO, EPI, EBG, EBO and EBI. The products are manufactured as equipped with all cables numbered, devices installed and labeled in accordance with the electrical project.

02
E SERIES
UNEQUIPPED SERIES

SERIES	DEFINITION	PURPOSE OF USAGE	MECHANIC SYSTEM	METAL SHEET OPTION	METAL SHEET THICKNESS	PAINT	LOCK SYSTEM	IP CODE	COPPER BUSBAR
EPO	EQUIPPED EXTERNAL TYPE BOARDS	POWER DISTRIBUTION COMPANIZATION RENEWABLE ENERGY FACILITIES CONSTRUCTION SITE	STANDARD	GALVANIZED DKP	1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPT.	3 POINT	IP 44 IP 54 IP 65 IP 66	TIN COATED WITH MACARON
EPI	EQUIPPED INTERNAL TYPE BOARDS	POWER DISTRIBUTION COMPANIZATION COUNTER - MCC AUTOMATION CONTROL DESKS TRANSFER	STANDARD FULL MODULAR SEMI-MODULAR	GALVANIZED DKP	1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPT.	3 POINT 4 POINT	IP 2X IP 42	TIN COATED WITH MACARON
EBG	EQUIPPED EMBEDDED (UNDER PLASTER) TYPE BOARDS	POWER DISTRIBUTION BOARDS COUNTER BOARDS	STANDARD	GALVANIZED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm	STANDARD RAL 7035 OTHER OPT.	1 POINT 2 POINT	IP 2X IP 44	TIN COATED WITH MACARON
EBO	EQUIPPED EXTERNAL TYPE SURFACE MOUNTED BOARDS	POWER DISTRIBUTION BOARDS COUNTER BOARDS COFFRA BOXES	STANDARD	GALVANIZED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPT.	1 POINT 2 POINT	IP 44	TIN COATED WITH MACARON
EBI	EQUIPPED INTERNAL TYPE SURFACE MOUNTED BOARDS	POWER DISTRIBUTION BOARDS	STANDARD	GALVANIZED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPT.	1 POINT 2 POINT	IP 2X IP 4X	TIN COATED WITH MACARON

EPO SERIES 2.1



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PROJECTING ACCORDING TO NEED

SEISMIC RESISTANCE REPORT

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

EPO series is a board series consisting of external type boards. The products are manufactured as equipped with all cables numbered, devices installed and labeled in accordance with the electrical project.

EXTERNAL TYPE BOARDS (EQUIPPED)

EPO SERIES	DEFINITION	MECHANIC SYSTEM	METAL SHEET OPTION	METAL SHEET THICKNESS	PAINT OPTION	LOCK SYSTEM	IP CODE
	EQUIPPED EXTERNAL TYPE BOARDS	STANDARD	GALVANIZED DKP	1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPT.	3 POINT	IP 44 IP54 IP65 IP66

TECHNICAL DETAILS						
SCAFFOLD	GATE	BASE	ROOF	REAR-SIDE COVERS	MONTAGE PLATE	COVER METAL SHEET
1,5 mm 2 mm	1,5 mm 2 mm	2 mm	2 mm	1,5 mm	1,5 mm 2 mm	1,2 mm

TYPES OF BOARDS ACCORDING TO INTENDED USE			
POWER DISTRIBUTION BOARD TYPES	COMPENSATION BOARD TYPES	RENEWABLE ENERGY BOARD TYPES	CONSTRUCTION SITE BOARD TYPES
MAIN DISTRIBUTION BOARDS (MDB) UPS DISTRIBUTION BOARDS (UDB)	HARMONIC FILTERED COMPENSATION BOARDS TRISTOR SWITCHED COMPENSATION BOARDS	SOLAR ENERGY BOARDS (SEB) WIND ENERGY BOARDS (WEB)	SOCKET LIGHTING IRRIGATION

2.1 EPO SERIES

EXTERNAL TYPE MAIN DISTRIBUTION BOARDS

They are the main distribution boards of power plants produced for outdoor use. The switches of the distribution lines of the power plant are located in these boards. These are the boards where the main distribution of electrical energy is made in factories, workshops and workplaces.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | SEISMIC RESISTANCE REPORT

EXTERNAL TYPE UPS DISTRIBUTION BOARDS

These are boards produced for outdoor use, where critical loads are fed via uninterruptible power supplies (UPS) in case of power outages.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | SEISMIC RESISTANCE REPORT

EPO SERIES 2.1

EXTERNAL TYPE HARMONIC FILTERED COMPENSATION BOARDS

Compensation boards are used where the harmonic pollution level and load change rate are low. Compensation boards are designed to reduce system costs. It is aimed to increase the active power utilization capacity by reducing the reactive energy demanded from transformers. Harmonic filter applications are used to prevent problems caused by harmonics. Voltage losses occurring in systems where harmonics are not filtered reduce efficiency and plant safety is also at risk.

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EXTERNAL TYPE THYRISTOR SWITCHED COMPENSATION BOARDS

Thyristor switched compensation boards are used where the harmonic pollution rate in the network is above the limits and the load change is fast.

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2.1 EPO SERIES

SOLAR ENERGY BOARDS

These are external type boards used in rooftop or field type solar power plants and transfer the generated solar energy to the grid.

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WIND ENERGY PLANT BOARDS

These are external type boards used in wind power plants and transfer the generated wind energy to the grid.

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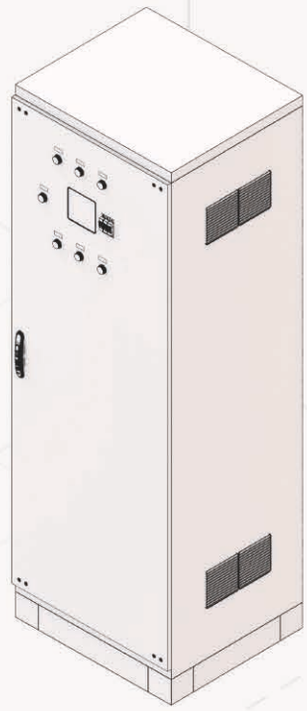
CONSTRUCTION SITE BOARDS

They are electrical boards used temporarily in the energy distribution of a newly constructed area. They can be produced in accordance with their intended use such as sockets, lighting and irrigation.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | SEISMIC RESISTANCE REPORT

EPI SERIES 2.2



EPI series is a panel series consisting of internal type panels. Products are produced in accordance with the electrical project, with all cables numbered, devices installed and labeled. Three types of mechanical system options are offered in our internal type panels. Modular, semi-modular and standard type panels are produced in line with the demands of our customers. (You can find details about mechanical systems on pages 46-49.)

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

SEISMIC RESISTANCE REPORT

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

MODULAR STRUCTURE

EXTERNAL TYPE BOARDS (EQUIPPED)

	DEFINITION	MECHANIC SYSTEM	METAL SHEET OPTION	METAL SHEET THICKNESS	PAINT OPTION	LOCK SYSTEM	IP CODE
EPI SERIES	EQUIPPED INTERNAL TYPE BOARDS	MODULAR SEMI-MODULAR	GALVANIZED DKP	1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPT.	3 POINT 4 POINT	IP 2X IP 44

TECHNICAL DETAILS						
SCAFFOLD	GATE	BASE	ROOF	REAR-SIDE COVERS	MONTAGE PLATE	COVER METAL SHEET
1,5 mm 2 mm	1,5 mm 2 mm	2 mm	2 mm	1,5 mm 2 mm	1-2 mm Between Values	1,2 mm 1,5 mm

TYPES OF BOARDS ACCORDING TO INTENDED USE			
POWER DISTRIBUTION BOARD TYPES	COMPENSATION BOARD TYPES	AUTOMATION BOARD TYPES	CONTROL BOARD
MAIN DISTRIBUTION BOARDS (MDB) UPS DISTRIBUTION BOARDS (UDB)	HARMONIC FILTERED COMPENSATION BOARDS TRISTOR SWITCHED COMPENSATION BOARDS	PLC BOARDS DDC BOARDS SCADA BOARDS	KIOSK PULT PIANO

2.2 EPI SERIES

INTERNAL TYPE MAIN DISTRIBUTION BOARDS

They are the main distribution boards of power plants produced for indoor use. The switches of the distribution lines of the power plant are located in these boards. These are the boards where the main distribution of electrical energy is made in factories, workshops and workplaces.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

SEISMIC RESISTANCE REPORT

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

MODULAR STRUCTURE

INTERNAL TYPE UPS DISTRIBUTION BOARDS

These are boards produced for indoor use, where critical loads are fed via uninterruptible power supplies (UPS) in case of power outages.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

SEISMIC RESISTANCE REPORT

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

MODULAR STRUCTURE

INTERNAL TYPE HARMONIC FILTERED COMPENSATION BOARDS

Compensation boards are used where the harmonic pollution level and load change rate are low. Compensation boards are designed to reduce system costs. It is aimed to increase the active power utilization capacity by reducing the reactive energy demanded from transformers. Harmonic filter applications are used to prevent problems caused by harmonics. Voltage losses occurring in systems where harmonics are not filtered reduce efficiency and plant safety is also at risk.

ROBUST AND ERGONOMIC
PROJECTING ACCORDING TO NEED
SEISMIC RESISTANCE REPORT
ELECTROSTATIC PAINTED
HIGH EFFICIENCY DESIGN
MODULAR STRUCTURE

INTERNAL TYPE THYRISTOR SWITCHING COMPENSATION BOARDS

Thyristor switched compensation boards are used where the harmonic pollution rate in the network is above the limits and the load change is fast.

ROBUST AND ERGONOMIC
PROJECTING ACCORDING TO NEED
SEISMIC RESISTANCE REPORT
ELECTROSTATIC PAINTED
HIGH EFFICIENCY DESIGN
MODULAR STRUCTURE

2.2 EPI SERIES

INTERNAL TYPE COUNTER BOARDS

These are the boards with electricity counters used to monitor the amount of energy consumption.

ROBUST AND ERGONOMIC
PROJECTING ACCORDING TO NEED
SEISMIC RESISTANCE REPORT
ELECTROSTATIC PAINTED
HIGH EFFICIENCY DESIGN
MODULAR STRUCTURE

INTERNAL TYPE MCC BOARDS

These are boards that provide automatic or manual, remote or close control of motors, pumps, fans.

ROBUST AND ERGONOMIC
PROJECTING ACCORDING TO NEED
SEISMIC RESISTANCE REPORT
ELECTROSTATIC PAINTED
HIGH EFFICIENCY DESIGN
MODULAR STRUCTURE

EPI SERIES 2.2

INTERNAL TYPE PLC AUTOMATION BOARDS

These are the boards used for automatic completion of process processes in production plants and factories.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

SEISMIC RESISTANCE REPORT

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

MODULAR STRUCTURE

INTERNAL TYPE DDC AUTOMATION BOARDS

These are boards that contain programmable logic control units in building automation systems.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

SEISMIC RESISTANCE REPORT

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

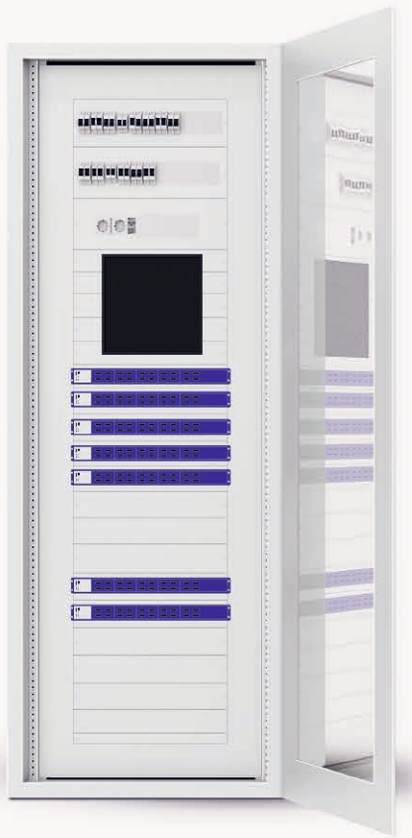
MODULAR STRUCTURE

2.2 EPI SERIES

INTERNAL TYPE SCADA AUTOMATION BOARDS

SCADA systems are centralized systems that control and monitor all sites. Thanks to the ease of control and data collection, many systems are easily monitored and control operations are easily performed.

- ROBUST AND ERGONOMIC
- PROJECTING ACCORDING TO NEED
- SEISMIC RESISTANCE REPORT
- ELECTROSTATIC PAINTED
- HIGH EFFICIENCY DESIGN
- MODULAR STRUCTURE



INTERNAL TYPE TRANSFER BOARD

Transfer board is a special type of board designed to provide load transfer between the grid and the generator.

- ROBUST AND ERGONOMIC
- PROJECTING ACCORDING TO NEED
- SEISMIC RESISTANCE REPORT
- ELECTROSTATIC PAINTED
- HIGH EFFICIENCY DESIGN
- MODULAR STRUCTURE

PULT TYPE CONTROL DESK

They are control boards with special form.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

PIANO TYPE CONTROL DESK

They are control boards with special form.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

2.2 EPI SERİSİ

KIOSK TYPE CONTROL DESK

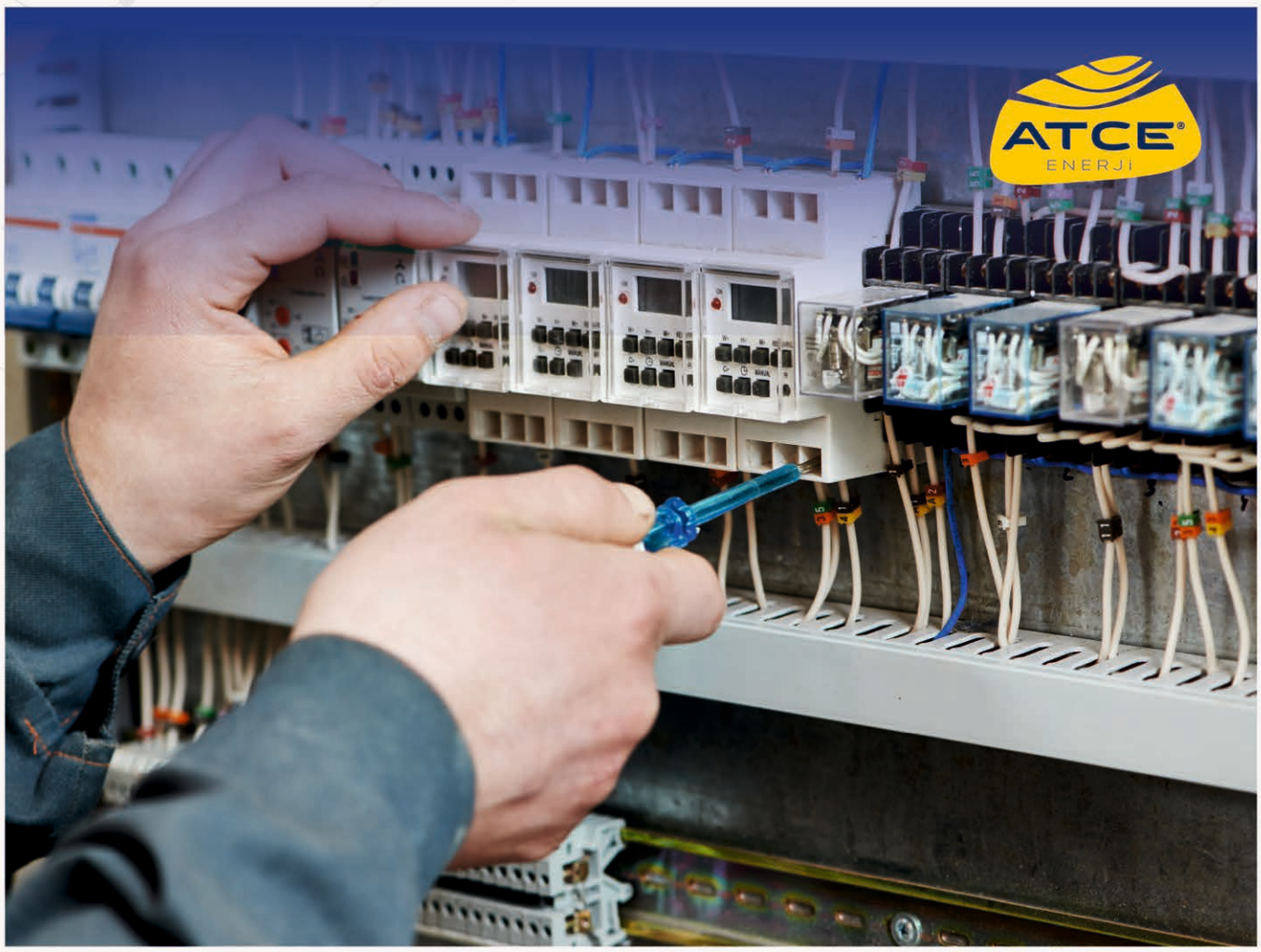
They are control boards with special form.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN



EBG SERIES 2.2

EBG series is a series of boards consisting of embedded type (flush-mounted) boards. The products are manufactured as equipped with all cables numbered, devices installed and labeled in accordance with the electrical project.

EQUIPPED EMBEDDED (FLUSH-MOUNTED TYPE BOARDS)

They are reinforced boards mounted embedded in the wall.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

LASER WELDED

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

EBG SERIES	DEFINITION	MECHANIC SYSTEM	METAL SHEET OPTION	METAL SHEET THICKNESS	PAINT OPTION	LOCK SYSTEM	IP CODE
	EQUIPPED EMBEDDED (UNDER PLASTER) TYPE BOARDS	STANDARD	GALVANIZED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm	STANDARD RAL 7035 OTHER OPT.	1 POINT 2 POINT	IP 2X IP 44

TECHNICAL DETAILS			
SCAFFOLD	COVER	MONTAGE PLATE	COVER METAL SHEET
0,8-1,5 mm between values	1-1,5 mm between values	0,8 mm 1 mm	0,8 mm 1 mm 1,2 mm

TYPES OF BOARDS ACCORDING TO INTENDED USE	
POWER DISTRIBUTION BOARDS	COUNTER BOARDS
	SINGLE PHASE COUNTER BOARD THREE PHASE COUNTER BOARD

EMBEDDED TYPE
SINGLE PHASE COUNTER BOARD

These boards are suiboard for flush mounting where single phase counters are mounted.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | LASER WELDED

EMBEDDED TYPE
THREE PHASE COUNTER BOARD

These boards are suiboard for flush-mounted installation where three-phase counters are mounted.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | LASER WELDED

EMBEDDED TYPE
POWER DISTRIBUTION BOARD

These are boards suiboard for flush-mounted installation where the necessary materials are collected in order to easily deliver the generated energy to the consumption areas and to ensure its use without interrupting the operation of other electrically operated receivers.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | LASER WELDED

EBO SERIES 2.2

EBO series is a series of boards consisting of external type surface mounted boards. The products are manufactured as equipped with all cables numbered, devices installed and labeled in accordance with the electrical project.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

LASER WELDED

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

EQUIPPED EXTERNAL TYPE SURFACE MOUNTED BOARDS

They are equipped external type surface mounted boards that are produced for outdoor use and mounted on walls, poles, etc. with hanging apparatus.

EBO SERIES	DEFINITION	MECHANIC SYSTEM	METAL SHEET OPTION	METAL SHEET THICKNESS	PAINT OPTION	LOCK SYSTEM	IP CODE
	EQUIPPED EXTERNAL TYPE SURFACE MOUNTED BOARDS	STANDARD	GALVANED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm 2 mm	STANDARD RAL 7035 OTHER OPT.	1 POINT 2 POINT	IP 44

TECHNICAL DETAILS			
SCAFFOLD	**COVER**	**MONTAGE PLATE**	**COVER METAL SHEET**
0,8-1,5 mm between values	1-1,5 mm between values	0,8 mm 1 mm	0,8-1,2 mm between values

TYPES OF BOARDS ACCORDING TO INTENDED USE		
POWER DISTRIBUTION BOARDS	**COUNTER BOARDS**	**COFFRA BOXES**
	SINGLE PHASE COUNTER BOARD THREE PHASE COUNTER BOARD	

2.2 EBO SERIES

EXTERNAL TYPE SURFACE MOUNTED SINGLE PHASE COUNTER BOARD

These boards are suiboard for surface mounting in open area where single phase counters are mounted.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | LASER WELDED

EXTERNAL TYPE SURFACE MOUNTED THREE PHASE COUNTER BOARD

These boards are suiboard for surface mounting in the open area where three-phase counters are mounted.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | LASER WELDED

EXTERNAL TYPE COFFRA BOXES

These are the boards suiboard for surface-mounted installation in the open area that connect the electrical installation of the buildings to the network in the electrical internal facilities regulation, install the fuses and at the same time provide electrical energy to the consumption facility in the general electrical network.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | LASER WELDED

EXTERNAL TYPE SURFACE MOUNTED POWER DISTRIBUTION BOARD

These boards are suiboard for surface-mounted installation in the open area where the necessary materials are collected in order to easily deliver the generated energy to the consumption areas and to ensure its use without interrupting the operation of other electrically operated receivers.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | LASER WELDED

EBI SERIES 2.2

EBI series is a series of boards consisting of internal type surface mounted boards. The products are manufactured as equipped with all cables numbered, devices installed and labeled in accordance with the electrical project.

INTERNAL TYPE SURFACE MOUNTED BOARD

They are equipped boards produced for indoor use and mounted on the wall with hanging apparatus.

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

LASER WELDED

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

EBI SERIES	DEFINITION	MECHANIC SYSTEM	METAL SHEET OPTION	METAL SHEET THICKNESS	PAINT OPTION	LOCK SYSTEM	IP CODE
	EQUIPPED INTERNAL TYPE SURFACE MOUNTED BOARDS	STANDARD	GALVANIZED DKP	0,8 mm 1 mm 1,2 mm 1,5 mm	STANDARD RAL 7035 OTHER OPT.	1 POINT 2 POINT	IP 2X IP 4X

TECHNICAL DETAILS			
SCAFFOLD	COVER	MONTAGE PLATE	COVER METAL SHEET
0,8-1,5 mm between values	1-1,5 mm between values	0,8 mm 1 mm	0,8 mm 1 mm 1,2 mm

TYPES OF BOARDS ACCORDING TO INTENDED USE	
POWER DISTRIBUTION BOARDS	

Products in the ES series; They are institutional type panels produced in accordance with the demands of Distribution Companies and/or contractor companies within TEİAŞ and TEDAŞ. The product series consists of 2 sub-series, ESO and ESI.

The products are manufactured in accordance with TEİAŞ, TEDAŞ MYD Specifications, with all cables numbered, devices installed and labeled.

03

ES SERIES

INSTITUTION TYPE EQUIPPED SERIES

SERIES	DEFINITION	PURPOSE OF USAGE	MECHANIC SYSTEM	METAL SHEET OPTION	METAL SHEET THICKNESS	PAINT	LOCK SYSTEM	IP CODE	COPPER BUSBAR
ESO	EQUIPPED EXTERNAL TYPE INSTITUTION BOARDS	TEDAŞ TEİAŞ METAL SHEET KIOSK	STANDARD	GALVANIZED	2 mm 3 mm	STANDARD RAL 7035 OTHER OPT.	3 POINT	IP 54	TIN COATED
ESI	EQUIPPED INTERNAL TYPE INSTITUTION BOARDS	TEDAŞ TEİAŞ	STANDARD	GALVANIZED	2 mm 3 mm	STANDARD RAL 7035 OTHER OPT.	3 POINT	IP 2X	TIN COATED

ES SERIES PRODUCT TYPES ACCORDING TO INTENDED USE

	TEDAŞ TYPE BOARD TYPES	TEİAŞ TYPE BOARD TYPES	TEİAŞ TYPE BOARD TYPES
ESO SERIES (EXTERNAL TYPE INSTITUTION BOARDS)	EXTERNAL TYPE AG(LV) DISTRIBUTION BOARDS (50-400 kVA) (BASE AND POST TYPES) SDK METAL SHEET BOX SDK FIBER GLASS BOX SDK LIGHTING BOX SDK HOT DIP GALVANIZED BOX	FIELD DISTRIBUTION BOXES (FDB)	TYPE1(AG+TR+OG) TYPE2H(AG/OG) TYPE2T(TR)

	TEDAŞ TYPE BOARD TYPES	TEİAŞ TYPE BOARD TYPES
ESO SERIES (INTERNAL TYPE INSTITUTION BOARDS)	INTERNAL TYPE AG(LV) DISTRIBUTION BOARDS (50-1600 kVA)	KRP BOARDS (34.5kV/154kV/380kV) KP BOARDS (34.5kV/154kV/380kV) OG SWICH BOARDS COMMUNICATION BOARDS BUS BAR PROTECTION BOARDS COUNTER BOARDS(4-6-8) AC DISTRIBUTION BOARDS DC DISTRIBUTION BOARDS

ESO SERIES 3.1

ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

CONFORMING TO SPECIFICATION

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

ESO series consists of institution type external type boards. The products are manufactured as equipped with all cables numbered, devices installed and labeled in accordance with TEİAŞ, TEDAŞ MYD Specifications.

EQUIPPED EXTERNAL TYPE SWITCHBOARDS

ESO SERIES	DEFINITION	MECHANIC SYSTEM	METAL SHEET OPTION	METAL SHEET THICKNESS	PAINT OPTION	LOCK SYSTEM	IP CODE
	EQUIPPED EXTERNAL TYPE INSTITUTION BOARDS	STANDARD	GALVANIZED	2 mm 3 mm	STANDARD RAL 7035 OTHER OPT.	3 POINT	IP 44 IP 54

TECHNICAL DETAILS						
SCAFFOLD	GATE	BASE	ROOF	REAR-SIDE COVERS	MONTAGE PLATE	COVER METAL SHEET
2 mm	2 mm 3 mm	2 mm 3 mm	2 mm 3 mm	2 mm 3 mm	1,5 mm 2 mm	1,5 mm 2 mm

TYPES OF BOARDS ACCORDING TO INTENDED USE		
TEDAŞ TYPE BOARD TYPES	TEİAŞ TYPE BOARD TYPES	METAL SHEET KIOSK CABIN TYPES
EXTERNAL TYPE AG(Low Voltage) DISTRIBUTION BOARDS (50-400 kVA) (BASE AND POST TYPES) SDK METAL SHEET BOX SDK FIBER GLASS BOX SDK LIGHTING BOX SDK HOT DIP GALVANIZED BOX	FIELD DISTRIBUTION BOXES (FDB)	TYPE1(AG+TR+OG) TYPE2H(AG/OG) TYPE2T(TR)

3.2 ESO SERIES

EXTERNAL TEDAŞ TYPE AG DISTRIBUTION BOARDS

In accordance with TEDAŞ MYD Specification, 50-400 kVA powers are produced in line with the projects and needs of Distribution Companies and/or contractor companies within TEDAŞ. External type boards, which are made suiboard for outdoor use, are generally used under the poles that feed low voltage subscribers on city or village energy transmission lines, as pole type or pedestal type according to the installation type.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

EXTERNAL TEDAŞ TYPE FIELD DISTRIBUTION BOX (SDK) SHEET BOX

It is used at the point of distribution of energy between the LV Board outlet and the subscriber in the energy networks under the commitment of Electricity Distribution Companies and / or contractor companies in accordance with TEDAŞ MYD Specification.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

EXTERNAL TEDAŞ TYPE FIELD DISTRIBUTION BOX (SDK) GLASS FIBER BOX

It is used at the point of distribution of energy between the LV Board outlet and the subscriber in the energy networks under the commitment of Electricity Distribution Companies and / or contractor company in accordance with TEDAŞ MYD Specification.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

EXTERNAL TEDAŞ TYPE FIELD DISTRIBUTION BOX (SDK) LIGHTING BOX

These are boards manufactured from sheet metal in order to control the lighting in the energy networks of Electricity Distribution Companies and / or contractor companies in accordance with TEDAŞ MYD Specification.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

3.2 ESO SERIES

EXTERNAL TEDAŞ TYPE FIELD DISTRIBUTION BOX (SDK) HOT DIP GALVANIZED BOX

It is used at the point of distribution of energy between the LV Board outlet and the subscriber in the energy networks under the commitment of Electricity Distribution Companies and/or contractor company in accordance with TEDAŞ MYD Specification.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

EXTERNAL TEİAŞ TYPE FIELD DISTRIBUTION BOX (SDK):

It is manufactured from galvanized sheet metal to be used outside the building in accordance with TEİAŞ specifications.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

EXTERNAL TYPE 1
SHEET METAL KIOSK CABINET

It consists of 3 sections as LV, TR and MV. Due to their disassembled structure, small size and light weight compared to concrete kiosks, they are frequently used especially in medium voltage energy distribution points with unsuiboard terrain and provide great convenience to the user in transportation and montage.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

EXTERNAL TYPE 2H
SHEET METAL KIOSK CABINET

They have LV/MV sections. Due to their disassembled structure, small size and light weight compared to concrete kiosks, they are frequently used especially in medium voltage energy distribution points with unsuiboard terrain and provide great convenience to the user in transportation and montage.

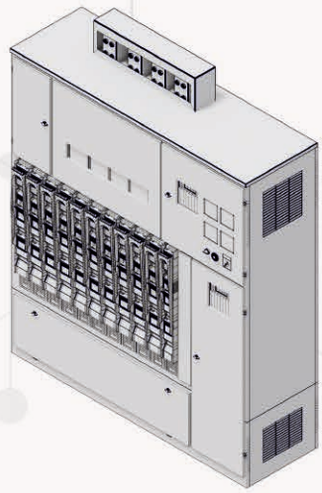
ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

EXTERNAL TYPE 2T
SHEET METAL KIOSK CABINET

TR section is available. Due to their disassembled structure, small size and light weight compared to concrete kiosks, they are frequently used especially in medium voltage energy distribution points with unsuiboard terrain and provide great convenience to the user in transportation and installation.

ROBUST AND ERGONOMIC
PROJECTING ACCORDING TO NEED
ELECTROSTATIC PAINTED
HIGH EFFICIENCY DESIGN
CONFORMING TO SPECIFICATION

ESI SERIES 3.1



ROBUST AND ERGONOMIC

PROJECTING ACCORDING TO NEED

CONFORMING TO SPECIFICATION

ELECTROSTATIC PAINTED

HIGH EFFICIENCY DESIGN

ESI series consists of institution type internal boards.
The products are manufactured in accordance with TEİAŞ, TEDAŞ MYD Specifications, with all cables numbered, devices installed and labeled.

EQUIPPED INTERNAL TYPE INSTITUTION BOARDS

	DEFINITION	MECHANIC SYSTEM	METAL SHEET OPTION	METAL SHEET THICKNESS	PAINT OPTION	LOCK SYSTEM	IP CODE
ESI SERIES	EQUIPPED INTERNAL TYPE INSTITUTION BOARDS	STANDARD	GALVANIZED	2 mm 3 mm	STANDART RAL 7035 OTHER OPT.	3 POINT	IP 2X

TECHNICAL DETAILS						
SCAFFOLD	GATE	BASE	ROOF	REAR-SIDE COVERS	MONTAGE PLATE	COVER METAL SHEET
2 mm	2 mm 3 mm	2 mm 3 mm	2 mm 3 mm	2 mm 3 mm	1,5 mm 2 mm	1,5 mm 2 mm

TYPES OF BOARDS ACCORDING TO INTENDED USE		
TEDAŞ TYPE BOARD TYPES	TEİAŞ TYPE BOARD TYPES	
INTERNAL TYPE AG(Low Voltage DISTRIBUTION BOARDS (50-1600 kVA)	KRP BOARDS (34.5kV/154kV/380kV) KP BOARDS (34.5kV/154kV/380kV) OG SWITCH BOARDS COMMUNICATION BOARDS BUS BAR PROTECTION BOARDS COUNTER BOARDS(4-6-8) AC DISTRIBUTION BOARDS DC DISTRIBUTION BOARDS	

3.2 ESI SERIES

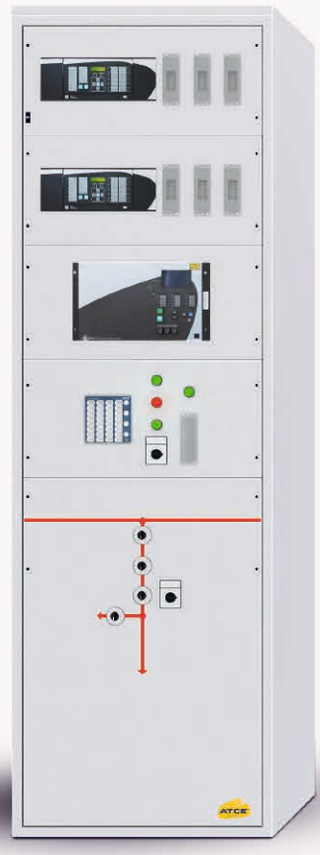
INTERNAL TEDAŞ TYPE AG DISTRIBUTION BOARDS

In accordance with TEDAŞ MYD Specification, they are manufactured between 50-1600 kVA in line with the projects and needs of Distribution Companies and/or contractor companies within TEDAŞ. Built for indoor use, internal type boards are generally used in the LV board compartment after the transformer outlet in the concrete and sheet metal kiosk.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

INTERNAL TEİAŞ TYPE KRP BOARDS

It describes the control relay boards that are manufactured in accordance with TEİAŞ specifications to protect and control the conductors, lines, devices and subscribers at the distribution point in the transmission and distribution networks at 34.5/154/380 kV voltage levels and to transfer information to SCADA automation by taking measurements. The boards are produced in accordance with the project, with all cables numbered, devices installed and labeled.



ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

ESI SERİSİ 3.1

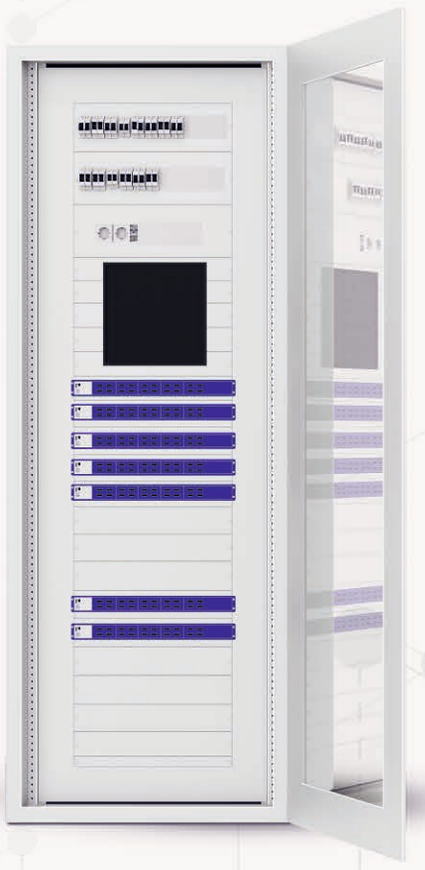
INTERNAL TEİAŞ TYPE KP BOARDS

It describes the control boards for protecting, controlling and taking measurements and transferring information to SCADA automation by taking measurements of conductors, lines, devices and subscribers at the distribution point in transmission and distribution networks at 34.5/154/380 kV voltage levels produced in accordance with TEİAŞ Specifications. The boards are produced in accordance with the project, equipped with all cables numbered, devices installed and labeled.

ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

INTERNAL TEİAŞ TYPE OG SWITCH BOARDS

These are the boards used to ensure the integration of the protection and control of Medium Voltage switchgears produced in accordance with TEİAŞ Specifications to SCADA.

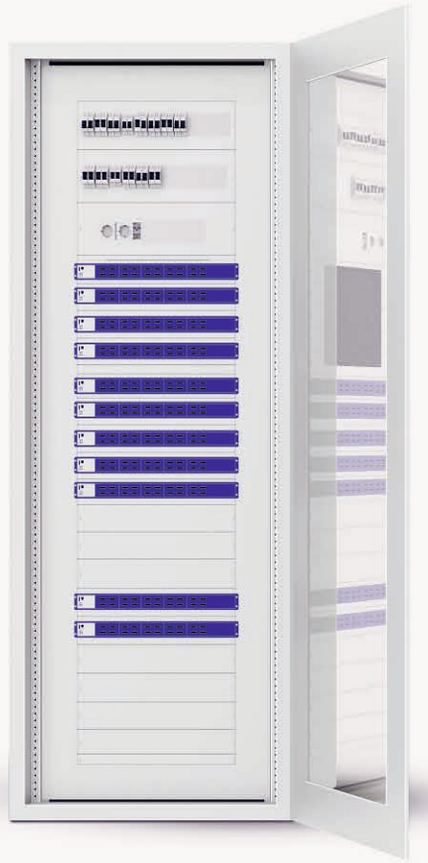


ROBUST AND ERGONOMIC | PROJECTING ACCORDING TO NEED | ELECTROSTATIC PAINTED | HIGH EFFICIENCY DESIGN | CONFORMING TO SPECIFICATION

3.2 ESI SERİSİ

INTERNAL TEİAŞ TYPE COMMUNICATION BOARDS

These are communication boards that are produced in accordance with TEİAŞ specifications and offer separate solutions for PLC channel and secondary automation.



ROBUST AND ERGONOMIC
PROJECTING ACCORDING TO NEED
ELECTROSTATIC PAINTED
HIGH EFFICIENCY DESIGN
CONFORMING TO SPECIFICATION

INTERNAL TEİAŞ TYPE BUSBAR PROTECTION BOARDS

These are boards produced in accordance with TEİAŞ specifications and used to protect the main busbar and to completely isolate the substation when necessary.

ROBUST AND ERGONOMIC
PROJECTING ACCORDING TO NEED
ELECTROSTATIC PAINTED
HIGH EFFICIENCY DESIGN
CONFORMING TO SPECIFICATION

INTERNAL TEİAŞ TYPE COUNTER BOARDS

They are boards with electricity counters produced in accordance with TEİAŞ specifications and used for monitoring the amount of energy consumption. There are varieties with 4-6-8 counters.

ROBUST AND ERGONOMIC
PROJECTING ACCORDING TO NEED
ELECTROSTATIC PAINTED
HIGH EFFICIENCY DESIGN
CONFORMING TO SPECIFICATION

INTERNAL TEİAŞ TYPE AC DISTRIBUTION BOARDS

They are used in substations to meet all AC source requirements.

ROBUST AND ERGONOMIC
PROJECTING ACCORDING TO NEED
ELECTROSTATIC PAINTED
HIGH EFFICIENCY DESIGN
CONFORMING TO SPECIFICATION

3.2 ESI SERİSİ

INTERNAL TEİAŞ TYPE DC DISTRIBUTION BOARDS

They are used in substations to meet all DC source requirements.

ROBUST AND ERGONOMIC
PROJECTING ACCORDING TO NEED
ELECTROSTATIC PAINTED
HIGH EFFICIENCY DESIGN
CONFORMING TO SPECIFICATION

TEİAŞ TYPE AUTOMATION BOARD

These are the boards used to ensure the integration of the entire control and protection system to SCADA.

ROBUST AND ERGONOMIC
PROJECTING ACCORDING TO NEED
ELECTROSTATIC PAINTED
HIGH EFFICIENCY DESIGN
CONFORMING TO SPECIFICATION

REFERENCES

PROJECT	CONTRACT	CHARACTERISTICS
Manufacturing of AG(Low Voltage), Field Distribution and Counter Boards for 21 Electricity Distribution Companies (deliveries over USD 30 million)	Production	EDAŞ BOARDS
Toki Projects Ag(Lv) - Field Distr.-Counter and Floor Boards Manufact. (over 50 Projects)	Production	TOKİ BOARDS
TOBB Karakoçan İmam hatip Lisesi (High School)	Production	SCHOOL BOARDS
Izmir City Toki Dormitory Building for 1000 People Cap.	Production	DORMITORY BOARDS
Bayburt City OSB(Organized Industrial Zone) Boards	Production	OSB(Organized Indust. Zone) BOARDS
City of Bingöl University	Production	University BOARDS
Adıyaman Gölbaşı State Hospital Boards	Production	Hospital BOARDS
Baskil State Hospital Boards	Production	Hospital BOARDS
Sivrice Municipality GES(Solar Power Project) Boards	Production	GES(Project) BOARDS
Malatya State Railways Loco and Wagon Maintenance Boards	Production	TCDD(railways) BOARDS
Ordu-Kumru 50-Bed State Hospital Boards	Production	Hospital BOARDS
Bitlis Tatvan State Railways Heating-Cooling Project Boards	Production	TCDD(railway) BOARDS
Adıyaman - Samsat 10 Bed State Hospital Project	Production	Hospital BOARDS
ETİ MADEN BORON FACILITIES AG(LV)+MCC BOARDS	Production	MCC BOARDS
Tokat-Turhal Hospital MCC Boards and Boards	Production	Hospital BOARDS
Wind Power Plants BOARDS for WIND VANE	Production	RES-WPP BOARDS for (wind vane)
MLA ENERJİ GES(Solar Power Project) Boards	Production	GES (SPP) Boards BOARDS
DİYARBAKIR CITY PRISON BOARDS	Production	MINISTRY OF JUSTICE BOARDS
ROOF ENERJİ GES(Solar Power Project) Boards	Production	GES(Solar Power Project) Boards
ZES DIGITAL ENERGY 2023 LV BOARD	Production	ELECTRIC CHARGING STATION BOARDS
154 kV SİVAS TC Protection and Relay Boards Manufacturing	Production	SCADA-CONTROL-COMM. BOARDS
154 kV Emet TC Protection and Relay Boards Manufacturing	Production	SCADA-CONTROL-COMM. BOARDS
154 kV Kayseri TC Protection and Relay Boards Manufacturing	Production	SCADA-CONTROL-COMM. BOARDS
154 kV Akdağ Mine TC Protection and Relay Boards Manufacturing	Production	SCADA-CONTROL-COMM. BOARDS
154 kV Zara TC Protection and Relay Boards Manufacturing	Production	SCADA-CONTROL-COMM. BOARDS
154 kV Malorsa TC Protection and Relay Boards Manufacturing	Production	SCADA-CONTROL-COMM. BOARDS
154 kV Elazığ-2 TC - Tunceli TC - Hasan Çelebi TC Prot. and Relay Boards Manufact.	Production	SCADA-CONTROL-COMM. BOARDS
154 kV Auxiliary TC Protection and Relay Boards Manufacturing	Production	SCADA-CONTROL-COMM. BOARDS
Iğdır 154 TC and Hilvan 380 TC Protection and Relay Boards Manufacturing	Production	SCADA-CONTROL-COMM. BOARDS
154 TC and 380 TC Protection and Relay Boards (TEİAŞ 12th REGIONAL OFFICE, 8 different Substations)	Production	SCADA-CONTROL-COMM. BOARDS
154 Kv Kasımlar Hes Boards	Production	SCADA-CONTROL-COM. BOARDS
154 kV İZMİT GIS BOARDS		

MECHANIC SYSTEM

MECHANIC SYSTEM	CONNECTOR THICKNESS	INTERNAL PARTITIONING	MOVING PARTS	LOCK SYSTEM
MODULAR SYSTEM	4 mm	FORM 4B - FORM 2B	HORIZONTAL - VERTICAL MONTAGE RECORDS	4 POINT
SEMI-MODULAR SYSTEM	3 mm	FORM 2B		4 POINT
STANDARD SYSTEM	3 mm	FORM 2B		3 POINT

MODULAR BOARDS

Our modular system boards can be designed in any size with ATCE patented 4 mm fittings, Form 2B, Form 4B internal partitions and horizontal-vertical moving parts. By combining modules of different sizes and shapes, it is possible to quickly produce customized boards to suit your needs.

SEMI-MODULAR BOARDS

Our semi-modular boards offer the flexibility and customization of modular boards with ATCE patented 3 mm fittings, Form 2B, internal baffles and horizontal-vertical moving parts, with the cost advantages of standard boards. A semi-modular boards is an boards system consisting of modular components combined with some features of a standard boards body. These boards have a body with a specific size and shape, and the components inside are modular. When combining components, just like modular boards, they are easy to replace and can be quickly configured.

STANDARD BOARDS

Our standard system boards feature ATCE patented 3 mm fittings and Form 2B internal partitioning. Because standard boards have a predefined size and shape, they are suiboard for a wide range of equipment with specific specifications. Features of standard boards include being available in a variety of sizes and shapes, offering various levels of protection, being made from high quality materials and being cost effective.

INFO

SHEET TYPE / SHEET THICKNESS

Galvanized and DKP sheets with thicknesses between 0.8-3 mm are processed on PLC Punch machines. While producing our products, sheet type and thickness are determined by our expert project engineers according to technical specifications, electrical-mechanical projects and the demands of our customers.

PAINTING

Processed sheets are coated with electrostatic paint in our paint facility. Board paint color is determined by our expert project engineers according to technical specifications, electrical-mechanical projects and the demands of our customers. RAL color codes are used in board paint color selection. The color code we use in our products as standard is RAL 7035. Paint micron thickness is determined according to the properties and requirements of the surface where the paint application is made. In corporate boards, the paint micron value is determined according to the values specified in the C specification. According to TEDAŞ MLZ 2003 -06 - B specification, the paint micron thickness is determined as 65 ± 15.

LOCK SYSTEM

1-4 point locking systems are applied on board, board and sheet metal kiosk doors. While single locking is applied up to 90 cm height in boards, double locking system is used in higher boards. In boards, 3-point locking system is used as bottom-top and middle part. In modular system doors, 4-point locking system is used.

IP PROTECTION CLASSES

While producing our products, IP Protection Classes are determined by our expert project engineers according to technical specifications, electrical-mechanical projects and the demands of our customers. According to the determined IP Protection Class, appropriate sealing applications are made on the doors. In our products, liquid gasket, wire gasket and adhesive gasket options can be preferred in accordance with the IP Protection Class.

COPPER BARA

In reinforced series, the cross-section and length of copper busbars are determined by our project engineers according to the power of the boards and boards. According to the technical specifications, electrical projects and the demands of our customers, copper busbars can be preferred as tin plated or tubing plated. In our tin plating facility in our factory, tin plating can be made in desired thickness. Macarons are applied to the busbars with heat shrinkage technique.

TECHNICAL GLOSSARY

COPPER BUSBAR:
Copper busbar is an electrical conductor with high conductivity and durability, generally used in high current carrying applications.

GASKET SYSTEM(FOR BOARD):
It is a sealing system used to protect the components inside the board/boards and to prevent external factors from entering the board/boards.

INTERNAL TYPE BOARD:
These are board types suiboard for indoor use.

DDC:
Direct Digital Control (ing. Direct Digital Control) (DDC) is a type of electronic control and management unit.

DKP METAL SHEET:
Material obtained by passing hot rolled flat steel material through a number of processes.

EQUIPPED BOARD:
Board/board furnished with electrical switchgear

UNEQUIPPED BOARD:
Empty board not furnished with electrical switchgear

ELECTROSTATIC PAINT
Electrostatic paint is a method of coating by attaching paint particles charged with high voltage to the surface by electrostatic attraction. In this method, the paint particles are electrically charged and the surface has an opposite electrical charge. When the paint is sprayed, the paint particles are attracted to the surface thanks to the charge difference and adhere to the surface, forming a homogeneous coating.

GALVANIZED SHEET:
Galvanized sheet is a product obtained by applying metallic zinc coating process on both surfaces of flat steel material produced by different processes in accordance with customer demands.

EMBEDDED TYPE BOARD:
These are the boards that are embedded in the wall, also referred to as flush-mounted.

POWER DISTRIBUTION BOARD:
A system that divides the electric current into various circuits and provides protective fuses or circuit breakers for each circuit.

SOLAR ENERGY BOARDS:
These are the types of boards needed in facilities where electricity is generated from solar energy. Solar energy is the radiant energy produced by the fusion process of hydrogen gas in the Sun into helium.

HARMONIC FILTER REACTOR:
Harmonic Filter Reactors are products used in filter compensation units by connecting to capacitors in series.

IP PROTECTIVE CLASS
IP is an abbreviation consisting of the initials Ingress Protection. The measure of an object's protection against solid objects (such as dust, sand and dirt) and liquids is called IP Protection Class. IP protection rating is the protection class that indicates the resistance of a product against external factors.

EXTERNAL TYPE BOARD
These are board types suiboard for outdoor use.

TIN PLATING:
Tin, an important coating material, can be used in the coating of many metals. By protecting the metal surfaces it covers, it increases corrosion resistance, electrical conductivity and solderability.

KIOSK
It is a control desk with a special form.

COFFER:
In the regulation on electrical internal facilities, it refers to a scheme that connects the electrical facility of the buildings to the network, ensures the installation of fuses and at the same time provides electrical energy to the consumption facility in the general electrical network.

COMPANIZATION:
The process of maximizing the active power, correcting the power factor and maximizing the efficiency is called compensation.

INSTITUTION BOARDS:
Refers to TEDAŞ and TEİAŞ type boards.

MAKARON:
Tubing, also known as shrinkable cable, is a special insulation sheath that shrinks a certain amount when exposed to heat and thanks to this shrinkage, it fixes, covers and covers the area where it is used.

MCC BOARD:
MCC stands for Motion Control Chart. In Turkish, it is the programming technique of motion control systems. These are boards that provide automatic or manual, remote or close control of motors, pumps, fans. It is the type of board used in multiple motor drives in facilities.

MODULAR BOARD:
Board systems that can be changed and adjusted according to the desired size with movable connection parts.

MOUNTING PLATE:
Sheet metal plates on which switchgear materials are laid in board systems.

AUTOMATION BOARDS:
These are the types of boards that enable the process processes in production facilities and factories to be carried out automatically.

BOARD(ELECTRICAL BOARD):
A cabinet in which the elements used in distribution and transmission are together in order to distribute electricity to the building/facility in the safest and most efficient way.

COVER SHEET:
Protective sheets used to prevent contact with conductive parts in electrical boards and boards.

TECHNICAL GLOSSARY

PLC:
PLC stands for Programmable Logic Controller, which means "programmable logic controller". It is an automation device used in the production departments of factories or in the control processes of working machines, which can be programmed according to demand and has the ability to perform automatic work.

PULT
It is a control board with a special form.

RAL 7035: Electrostatic Paint color code. It is a light gray color tone.

WIND ENERGY BOARDS:
These are the types of boards needed in facilities where electricity is generated from wind energy. Wind energy is a renewable energy type that generates electricity by converting the kinetic energy (motion energy) of the air into electricity through wind turbines.

METAL SHEET
Iron and steel product in sheet condition.

METAL SHEET CABINET:
A three-compartment sheet metal cabinet consisting of MV, LV boards sections with metal enclosed modular cubicles.

SWITCHBOARD:
Boards that are embedded in the wall, also referred to as embedded type.

SURFACE MOUNTED BOARD:
Boards mounted on the wall with hanging apparatus.

SCADA:
It is an abbreviation formed by reading the first letters of the English words "Supervisory Control and Data Acquisition". It stands for Centralized Control and Data Acquisition System. SCADA systems are a general name given to systems that control and monitor the units located in a large region through a central computer and store the historical data of the units.

CONSTRUCTION SITE BOARDS:
A construction site board is a temporary electrical board used in the energy distribution of a newly constructed area.

BOARD (ELECTRICITY BOARD):
A wall-mounted cabinet in which the elements used in distribution and transmission are located together in order to distribute electricity to the building/facility in the safest and most efficient way.

TEDAŞ:
Türkiye Elektrik Dağıtım A.Ş. (TEDAŞ) was an economic state enterprise responsible for the distribution and retail sale of electrical energy in Turkey and was privatized and divided into 21 distribution regions.

TEIAS:
Türkiye Elektrik İletim A.Ş.

TRANSFER BOARDS:
It is a special type of board designed to provide load transfer between the grid and the generator.

THYRISTOR SWITCHED COMPENSATION BOARD: These are boards used where the harmonic pollution rate in the network is above the limits and the load change is fast.

SEMI-MODULAR:
A mechanical system consisting of modular components combined with some features of a standard board body.

RENEWABLE ENERGY:
Renewable energy is energy that can be obtained from carbon-neutral natural sources such as sunlight, wind, rain, tides, waves and geothermal heat, and that can be obtained from sources that are naturally renewed on a human time scale.

IP PROTECTION CLASS SELECTION

SECURITY CLASSES			
CLASS 0	**CLASS 1**	**CLASS 2**	**CLASS 3**
Basic insulated protection	Earthing mandatory products	Earthing non-mandatory products	Products powered by transformer or battery up to 24 volts

Ipxy PROTECTION CLASSIFICATION SCHEDULE

(according to CEI 529, DIN 400 50, BS 5490 and NF C 20-010 Norms)

First characteristic number	X - SHORT DESCRIPTION PROTECTION AGAINST SOLID OBJECTS	Second characteristic number	Y - SHORT DEFINITION PROTECTED AGAINST WATER
0	Unprotected	0	Unprotected
1	Protected against solid objects larger than 50 mm. (Example: Unintentional contact of the hand)	1	Protected against dripping water
2	Protected against solid objects larger than 12.5 mm. (Example: finger contacts)	2	Protected against dripping water when tilted up to 15°
3	Protected against solids larger than 2.5 mm (e.g. tools, screws)	3	Protected against rain
4	Protected against solids larger than 1.0 mm (e.g. thin tools, small wires)	4	Protected against splashing water
5	Protected against dust	5	Protected against water spray
6	Dustproof	6	Protected against violent sea waves
		7	Protected against the effects of immersion in water
		8	Protected against submersion under water

PROTECTION CLASSES							
	IP20	**IP43**	**IP44**	**IP54**	**IP55**	**IP65**	**IP67**
USE REQUIRED AREAS	In dry areas without dust	In open damp and wet areas	In open damp and wet areas	In damp and dusty areas	In damp and wet areas	In damp and wet areas	Underwater
SUYA KARŞI KORUMA	-	Protection against water coming in at a 60° angle vertically	Protection against water from all directions	Protection against splashing water from all directions	Protection against gushing, fast water from all directions	Protection against gushing, fast water from all directions	Protection against pressurized water
TOZ VE CİSİMLERE KARŞI KORUMA	Protection against objects larger than 12 mm	Protection against objects larger than 1 mm	Protection against objects larger than 1 mm	Protection against dust	Protection against dust	Dustproof	Dustproof

MECHANIC IMPACT PROTECTION (according to Annex 1 of Norm NF 20-010)	Degree of Protection	
	0	Unprotected
	1	Impact; 0.225 joules
	3	Impact; 0,500 joules
	5	Impact; 2.00 joules
	7	Impact; 6.00 joules
	9	Impact; 20.00 joules

BUSBAR SECTION SELECTION CHART

CONTINUOUS LOAD CURRENTS IN COPPER BUSBARS

AMBIENT TEMPERATURE:25 °C HEATING: 30 °C										
Dimensions (mm)	Cross section (mm^2)	Weight (kg/m)	CONTINUOUS LOAD CURRENT (A) - 50 Hz. A.C.							
			NUMBER OF PAINTED BUSBARS				NUMBER OF BARE BUS BARS			
			I	II	III	IV	I	II	III	IV
12x2	24	0,21	125	250	-	-	110	220	-	-
15x2	30	0,27	155	270	-	-	140	240	-	-
15x3	45	0,40	185	330	-	-	170	300	-	-
20x2	40	0,36	205	350	-	-	185	315	-	-
20x3	60	0,54	245	425	-	-	220	380	-	-
20x5	100	0,89	325	550	-	-	290	495	-	-
25x3	75	0,67	300	510	-	-	270	460	-	-
25x5	125	1,12	385	670	-	-	350	600	-	-
30x3	90	0,80	350	600	-	-	315	540	-	-
30x5	150	1,34	450	780	-	-	400	700	-	-
40x3	120	1,07	460	780	-	-	420	710	-	-
40x5	200	1,78	600	1000	-	-	520	900	-	-
40x10	400	3,56	835	1500	2060	2800	750	1350	1850	2500
50x5	250	2,23	720	1200	1750	2300	630	1100	1500	2100
50x10	500	4,45	1025	1800	2450	3330	920	1620	2200	3000
60x5	300	2,67	825	1400	1980	2650	750	1300	1740	2400
60x10	600	5,34	1200	2100	2800	3800	1100	1860	2500	3400
80x5	400	3,56	1060	1800	2450	3300	950	1650	2200	2900
80x10	800	7,12	1540	2600	3300	4600	1400	2300	3100	4200
100x5	500	4,45	1310	2200	2950	3800	1100	2000	2600	3400
100x10	1000	8,90	1880	3100	4000	5400	1700	2700	3600	4800
120x10	1200	10,68	2200	3500	4600	6100	2000	3200	4200	5500
160x10	1600	14,24	2880	4400	5800	7800	2600	3900	5200	7000

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Elektrik Mühendisleri Odası İzmir Şube(1987) (Chamber of Electrical Engineers Izmir City Branch (1987)
Design of Medium Voltage Transformers.
Izmir City: **Emo Publications**. 123 p. (ruler 3.8)

CABLE SELECTION BOARD

YVV (NYY) TS 212

WHERE USED

It is used as power cable under ground, in cable ducts, externally and internally, underground, in fresh water, (in salt water if specially manufactured), in power plants, industrial plants and switchgears.

WHERE USED

Single stranded up to 1.5-10 mm² and multi-stranded from 10 mm² to 300 mm². Insulated with insulating sheath and covered with outer sheath. Single wire up to 10 mm² in 2-4 cores, multi-wire in sections larger than 10 mm². There is a common sheath on the veins twisted together and a black colored outer sheath on it.

HIGHEST CONDUCTOR TEMPERATURE: 70°C / MAIN VOLTAGE: 0.6/1Kv

AMBIENT TEMPERATURE:25 °C HEATING: 30 °C										
Nominal cross-section mm²	Number of wires	Conductor diameter mm	Insulated sheath wall thicknes mm	Outer sheath wall thickness mm	Outer to outer diameter mm	Twist diameter cm	Resistance Ohm/km	CURRENT CARRYING CAPACITY		Weight kg/km
								A in earth	A in air	
1x1,5	1	1,38	1,5	1,8	8	11	11,9	37	26	65
1x2,5	1	1,80	1,5	1,8	8,4	11	7,14	50	35	80
1x4	1	2,26	1,5	1,8	8,9	12	4,47	65	46	110
1x6	1	2,80	1,5	1,8	9,4	13	2,97	83	58	140
1x10	1-7	4,1	1,5	1,8	10,7	14	1,79	110	80	195
1x16	1-7	5,2	1,5	1,8	11,7	15	1,12	145	105	270
1x25	7	6,4	1,5	1,8	12,9	18	0,712	190	140	370
1x35	7-19	7,7	1,5	1,8	14,1	20	0,514	235	175	480
1x50	19	9,2	1,5	1,8	15,6	23	0,379	280	215	640
1x70	19	11	1,5	1,8	17,2	26	0,262	350	270	850
1x95	19	12,7	1,6	1,8	19,4	29	0,189	420	335	1115
1x120	37	14,4	1,6	1,8	21,4	30	0,150	480	390	1340
1x150	37	16,1	1,8	1,8	23	33	0,122	540	445	1660
1x185	37	18	2,0	2,0	25,7	36	0,0972	620	510	2030
1x240	61	20,5	2,2	2,0	29	44	0,0740	770	620	2650
1x300	61	22,7	2,4	2,0	32	48	0,0590	820	710	3370
2x1,5	1	1,38	0,3	1,8	11	14	12,1	30	21	170
2x2,5	1	1,80	0,9	1,8	13	16	7,28	41	29	220
2x4	1	2,26	1,0	1,8	14	17	4,56	53	38	290
2x6	1	2,80	1,0	1,8	15	18	3,03	66	48	350
2x10	1-7	4,1	1,0	1,8	17	21	1,83	88	66	480
3x1,5	1	1,38	0,8	1,8	12	15	12,1	27	18	190
3x2,5	1	1,80	0,9	1,8	13	16	7,28	36	25	260
3x4	1	2,26	1,0	1,8	15	19	4,56	46	34	340
3x6	1	2,80	1,0	1,8	16	20	2,03	58	44	420
3x10	1-7	4,1	1,0	1,8	17	21	1,83	77	60	580
4,1,5	1	1,38	0,8	1,8	13	16	12,1	27	18	230
4x2,5	1	1,80	10,9	1,8	14	17	7,28	36	25	300
4x4	1	2,26	1,0	1,8	16	19	4,56	46	34	410
4x6	1	2,80	1,0	1,8	17	21	3,03	58	44	510
4x10	1-7	4,1	1,0	1,8	20	23	1,83	77	60	780
4x16	1-7	5,2	1,0	2,0	23	27	1,15	100	80	1100
3x25/16	7	6,4	1,5	2,0	27	33	0,07270	130	105	1420
3x35/16	7-19	7,7	1,5	2,0	30	36	0,524	155	130	1790
3x50/25	19	9,2	1,5	2,2	36	44	0,387	185	160	2290
3x70/35	19	11	1,5	2,2	40	49	0,268	230	200	3066
3x95/50	19	12,7	1,6	2,4	45	55	0,193	275	245	4097
3x120/70	37	14,4	1,6	2,6	50	61	0,153	315	285	5700
3x150/70	37	16,1	1,8	2,8	52	69	0,124	355	325	6132
3x185/95	37	18	2,0	3,0	59	77	0,991	400	370	7625
3x240/120	61-37	20,5	2,2	3,2	66	82	0,574	460	435	9950
3x300/150	61-37	22,7	2,4	3,4	73	92	0,0601	520	500	12500

COMPENSATION CALCULATION BOARD

SELECTION BOARD OF THE MATERIAL TO BE USED IN FIXED AND AUTOMATIC COMPENSATION OPERATING VOLTAGE: 400 V)

Capacitor power	Main Feed Line Circuit Elements					Fixed and Automatic Compensation Stages Circuit Elements								
	Rated Current	Automatic switch	Cable NYY	Main busbar	Tap Busbar	Fuse NH type	Contactor	Automatic Fuse	Tap Cable NYY	Discharge Resistors				
										Automatic		Fixed		
kVAr	A	A	mm²	mm²Cu	mm²Cu	A	A	A	mm²	Kohm	W	Kohm	W	
5	7,6	16	3x2.5	-	-	16	9	16	3x2.5	31	4	205	3	3x33
10	15	25	3x4	-	-	25	16	25	3x4	15	4	102	5	3x66
15	22	40	3x6	-	-	36	32	40	3x6	10	6	68	8	3x99
20	29	63	3x6	-	-	50	32	50	6	6.8	6	51	10	3x132
25	36	100	3x6	-	-	63	40	63	6	1.5	6	41	12	3x165
30	43	100	3x6	-	-	80	45	80	6	1.5	6	34	15	3x198
40	58	100	3x10	25x3	25x3	100	63	100	10	1.5	6	25	20	3x264
50	72	125	3x16	25x3	25x3	125	80	125	16	1.5	6	20	25	3x330
60	87	125	3x25	25x3	25x3	160	90	-	25	1	12	17	30	
80	115	160	3x35	25x3	25x3	200	115	-	35	1	12	14	34	
100	144	200	3x50	25x3	25x3	250	160	-	50	1	12	10	50	
125	180	250	3x70	30x5			185							
150	216	300	3x95	30x5			225							
200	288	400	2x(3x50)	30x5										
250	361	400	2x(3x70)	40x5										
300	433	630	2x(3x95)	40x5										
350	505	630	3x(3x70)	40x5										
400	577	800	3x(3x95)	40x5										
450	650	800	3x(3x95)	40x10										
500	722	1000	3x(3x95)	40x10										
550	793	1000	4x(3x70)	40x10										
600	866	1000	4x(3x95)	40x10										

Note : The numbers in ( ) are equivalent cable cross sections.

QUALITY CERTIFICATES

OUR QUALITY POLICY

Our services and solutions in energy systems have been shaped thanks to the experience we have gained from the projects we have realized across the country. While offering our services and solutions, we take care to follow internationally recognized standards.

Our organizational goals include increasing efficiency in energy and production, ensuring that our infrastructure systems can operate uninterruptedly even in times of disaster, and contributing to the development of business processes.

For this purpose, we have certified our standards in accordance with international quality management systems.

We have left our mark on every

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