

ACDC ELECTRIC



AcDc ELECTRIC Co. (Pvt.) Ltd.
In Power for Generations



ABOUT US

AcDc Electric is in the business of Electrical Equipment and Products for Power Generation, Renewable Energy, Transmission and Distribution and all kinds of services for the Design, Engineering, Supply, Installation, Testing, Commissioning and After-sales service.

OUR MISSION

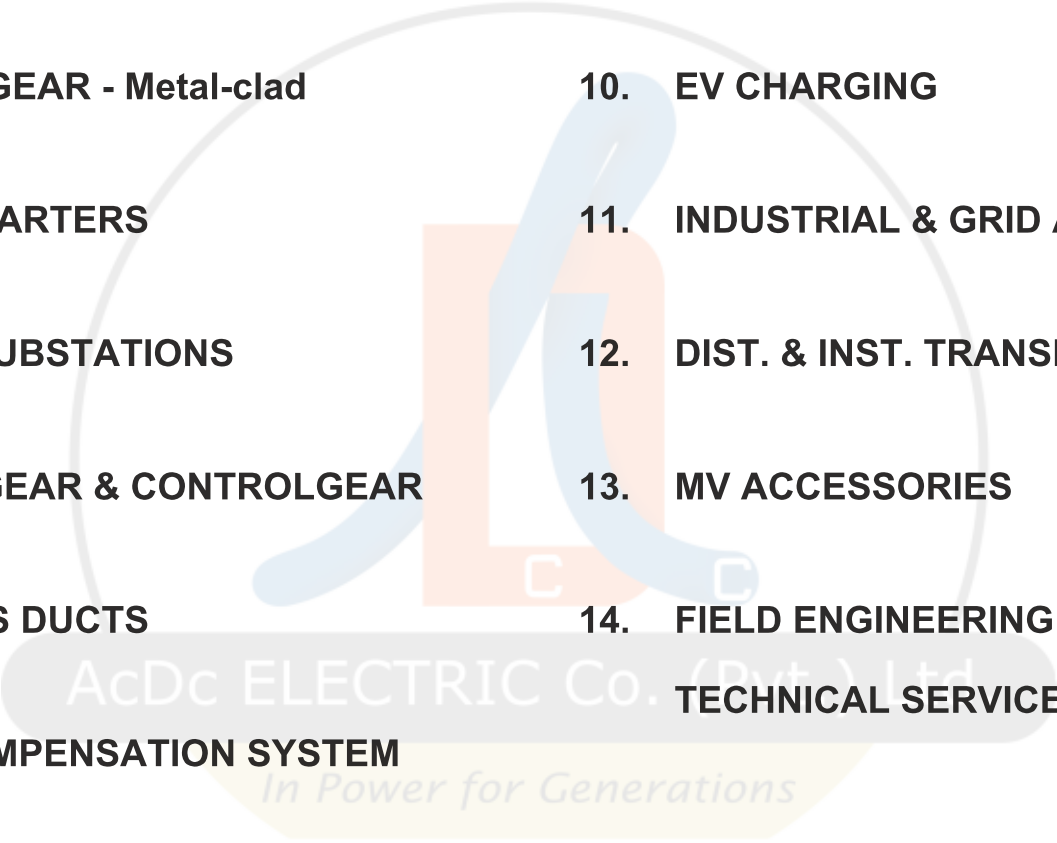
ASSUME RESPONSIBILITY FROM BASIC ENGINEERING TO PRODUCT SELECTION AND INTEGRATION WITH THE DETERMINATION TO PROVIDE THE COMPREHENSIVE SOLUTIONS TO THE VALUED CUSTOMERS

OUR VISION

TO REMAIN TECHNOLOGY DRIVEN COMPANY AND CONTRIBUTE AS ONE OF THE STAKE HOLDERS OF ELECTRICAL ENERGY.

With 30 years of experience in electrical product development and close cooperation with the world's leading component manufacturers we remain familiar with the possibilities offered by state-of-the-art technology and our knowledge is at your service.

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1. MV SWITCHGEAR - Compact & Modular
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 12. DIST. & INST. TRANSFORMERS
 13. MV ACCESSORIES
 14. FIELD ENGINEERING AND TECHNICAL SERVICES

1 - MEDIUM VOLTAGE SWITCHGEAR

Factory assembled, type tested switchgear acc. to IEC 62271-200. The Medium Voltage switchgear in compact and modular design is adequately covering the requirements for industries and commercial buildings, Secondary substations on ring or radial networks of energy distributors and utilities and Renewable energy projects.

a) The RMU GIS - SF6 gas-insulated switchgears

■ 36kV, 630A, 25kA



■ 17.5kV, 630A, 21kA



b) Metal-enclosed Modular Design switchgear

- Rated 4.16kV, 7.2kV, 17.5kV & 36kV
- Main Busbar Current rating up to 1250A
- Short time withstand Current up to 25KA
- Indoor application
- Outdoor option available in containerized solution



c) Metered Ring Main Unit*

- Rated 13.8kV & 36kV /38kV
- Main Busbar Current rating up to 630A
- Short time withstand Current up to 25KA

* For KSA, as per Saudi Electricity Co. specifications
32-SDMS-02, 05 & 06



2 - MEDIUM VOLTAGE SWITCHGEAR (Metalclad)

The Medium Voltage Metalclad Switchgear conforms to the latest IEC standards. The MV switchgear is adequately covering the requirements for utilities, industries and commercial buildings.

Characteristics

- Metal-clad, air-insulated switchgear
- Suitable for medium voltage distribution rated voltage 4.16kV, 7.2kV, 17.5kV & 36kV
- Main Busbar Current rating up to 4000A
- Short time withstand Current up to 50KA, indoor or outdoor installation

Rated voltage U_r (max) - kV	7.2	17.5	36
Feeder rated current - A	630 - 3150	630 - 3150	630-3150
Feeder rated current - A	3600 - 4000	3600 - 4000	3600-4000
Rated Insulation - kV	20 / 60	38 / 95	70 / 170
Rated short-time withstand current I_k 1s, 2s, 3s - kA	20, 25, 31.5, 40, 50	20, 25, 31.5, 40, 50	31.5



3 - MEDIUM VOLTAGE SOFTSTARTER

The Medium Voltage Soft starters are used in process industries for soft starting of heavy MV motors. These are produced from galvanized steel in a stable heavy duty construction and separated into two metal enclosed sections. One portion having Low voltage part and Busbar, and the other portion MV compartment inclusive of MV power electronic module and MV cable connection.

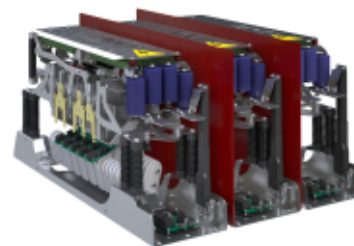
The Soft starters are available in 4.16kV, 7.2kV and 12kV range.

Models

80 A ~ 321 A (3 Wire)

Voltage ranges:

2300 V AC
3300 V AC
4160 V AC
6600 ~ 7200 VAC



4 - MV PACKAGE SUBSTATION

The Package Substation conforms to the latest IEC standard. It comprises of three portions:

- MV Compartment having Ring Main Unit
- Distribution Transformer compartment
- LV compartment having LV switchgear panel.

RATINGS

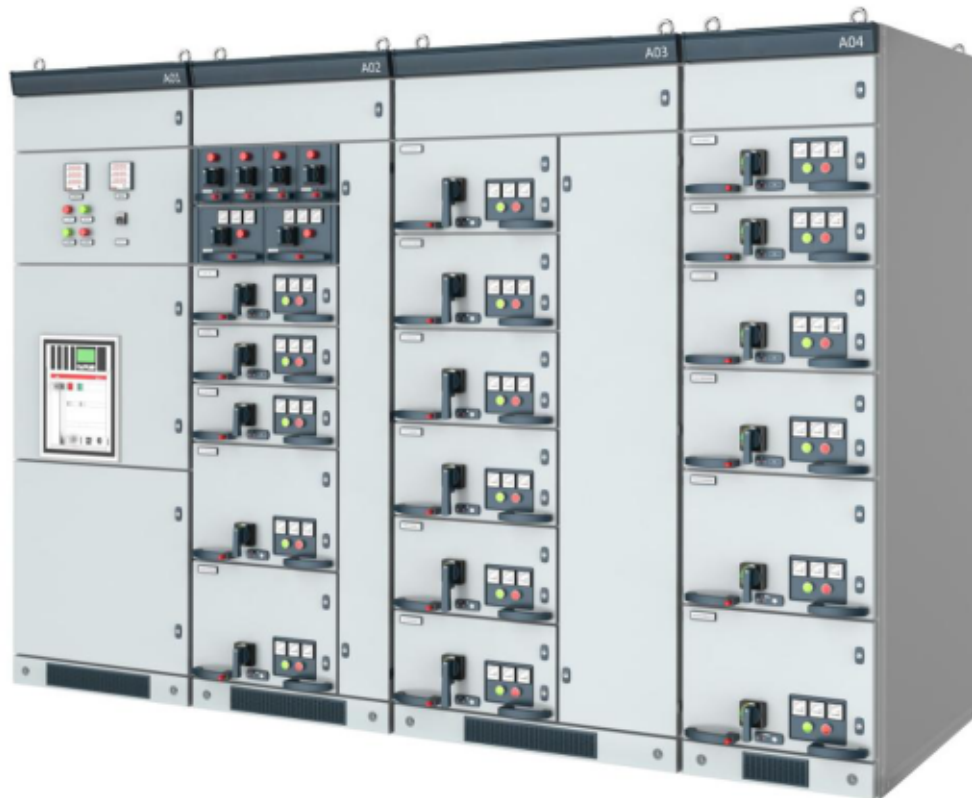
Rated Voltage	17.5KV	36KV
Operating Voltage	13.8KV	33KV
Rated Capacity—Max.	2500 KVA	3150 KVA
Impulse Withstand Voltage	95KV	170KV /200KV
Power Frequency Withstand	38KV	70KV- 85KV
Short Time Current	21KA /1s	25KA/1s
Rated Secondary Voltage	Up to 480VAC	
Low Voltage section	Main Busbar upto 3000A	



5 - LOW VOLTAGE SWITCHGEAR & CONTROLGEAR

The Low Voltage Switchgear and Controlgear conforms to the latest IEC standard.

- Available up to 690VAC
- Main Busbar rating up to 5000A
- Up to 100KA, indoor or outdoor installation
- Up to Form 4 for customer safety requirement
- Easy handling of control switches and monitoring equipment

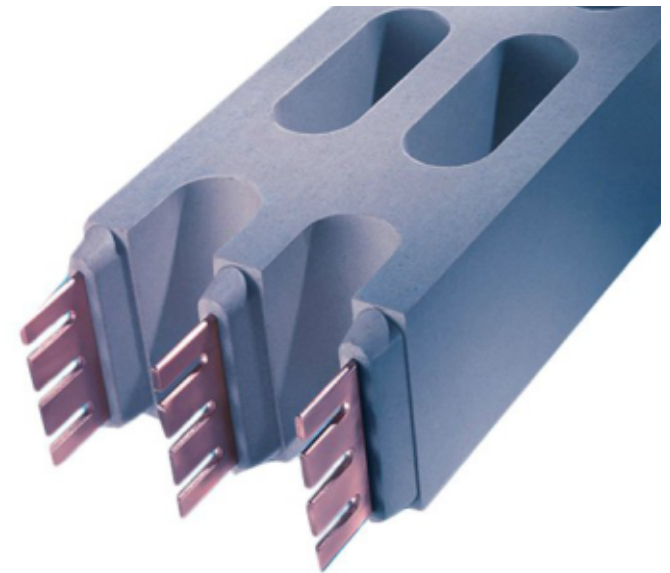
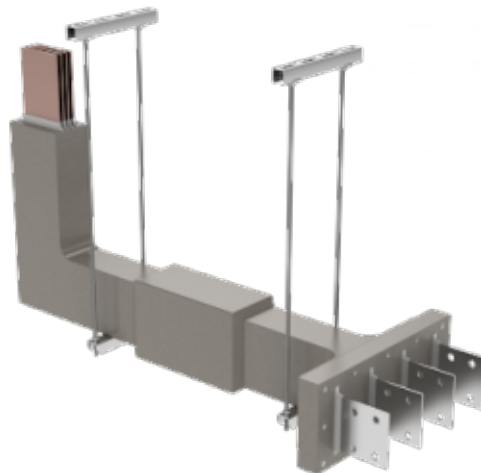


6- MV & LV BUS DUCTS

We offer MV & LV BUSDUCTS from our internationally renowned partner in CAST RESIN design.

Due to the complete insulation the conventional control / monitoring equipment such as Thermostat, condensation draining device and space heater are not required since the BUSDUCT is fully encapsulated. The Medium Voltage Cast-Resin Insulated Busway is:

- Developed for power systems between 3.6kV~24kV,
- The product has features of safety and compactness.
- The insulation material is cast resin:
 - Ø containing non-organic volcanic rock and
 - Ø has excellent insulation characteristics and mechanical strength,
 - Ø is humidity-proof, non-combustible, and self-extinguishing.



TECHNICAL COMPARISON

	CAST RESIN TYPE	CONVENTIONAL TYPE
Voltage	LV: up to 1kV, MV: up to 27kV	LV: 1kV
Ampere Ratings	LV & MV: up to 6500A,	LV: up to 5000A
Dimension	1600A: 160mm X 104mm	1600A: 171mm x 149mm
Weight	1600A: 50 kg/mtr	1600A: 44 kg/mtr
Protection Rating	IP68	IP55
Impact Resistance	IK10	-
Maintenance	Maintenance-free	Annual check-up required
Seismic Test	0.8G (Magnitude 7)	-
Fire Resistance	Passed by IEC 60331	-

7 - MV & LV COMPENSATION SYSTEMS

The Compensation System (also known as Power Factor Correction / Improvement plant), is used to improve / correct the Power Factor of the Power System of a consumer of the electricity.

Reactive energy is used in particular in the windings of motors and transformers to create the magnetic field without which they would not be able to operate. The reactive power corresponds to this energy. Unlike active energy, reactive energy is said to be "unproductive", as it does not produce mechanical work and it is an additional load for the energy supplier.

The parameter that defines the consumption of reactive power is the **Power Factor**. Low Power Factor means high reactive power requirement.

Disadvantages of Low Power factor:

- Penalty imposed by the Utility
- High power losses in the electrical lines
- High voltage variation in the electrical lines
- Over sizing of generators, electric lines and transformers.

Benefits of installing a Compensation System:

- Eliminating the Low Power factor Penalty from the utility.
- Increased system capacity and reduced system losses in electrical system.
- Increased voltage level in electrical system with cooler, more efficient motors.

We have a dedicated team of professional engineers and proper equipment for measuring and recording requisite data at customer site. The report is prepared with recorded data, duly analysed and an optimum solution is determined (minimum cost, maximum gain).





A medium voltage (MV) Compensation System primarily comprises following components:

- Ø MV Disconnectors
- Ø MV Fuses
- Ø MV Vacuum contactors
- Ø MV Capacitors
- Ø MV Reactors
- Ø Current Transformer Unbalanced Protection
- Ø Discharge Voltage Transformer
- Ø Power Factor Controller

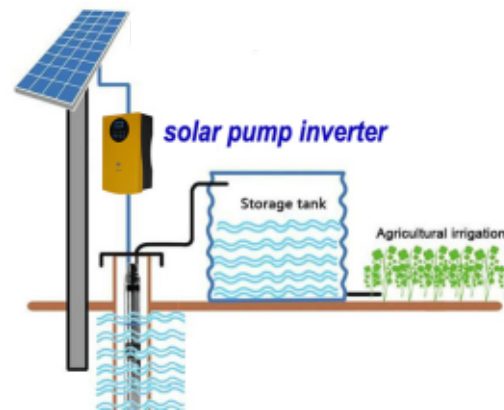
8 - SOLAR SOLUTIONS

Solar power system is one of renewable energy systems which uses PV modules to convert sunlight into electricity. Solar PV system is very reliable and clean source of electricity that can suit a wide range of applications such as residence, industry, agriculture, livestock, etc. It comprises of different components that should be selected according to the system type, site location and applications. The major components and accessories are:

- PV module: this converts sunlight into DC electricity.
- Solar Charge Controller: This prevents battery overcharging and prolongs the battery life as it regulates the voltage and current for the battery.
- Battery: This stores energy for supplying to appliances on demand.
- Inverter: converts DC output of PV Panels into a clean AC supply for AC appliances.
- Accessories: Combiner box, Surge Protection Device and CBs

We offer state of the art products and services as part of solar solutions such as:

- Solar system for Residences
- Solar system for Mosques
- Solar system for Industries
- Solar system for Commercial Buildings
- Solar system for Irrigation
- Solar Street Lighting
- Solar Air Conditioner
- Solar Deep Freezer
- Solar Cold Storage



Solar Water Pumping System



Solar Street Light



Solar for Home



Solar Air Conditioner



Solar Deep Freezer

We are also offering solar systems for temporary power applications on **rental** basis, such as Mobile Power Systems and Solar Powered Cold Storage System.



Portable



Mobile



Cold Storage

9 - MOBILE SUBSTATIONS

We offer Mobile Substations from our European partners confirming to utility requirements. Mobile substations are a perfect solution, whenever utilities and industries need to provide interim grid connections and temporary power supplies.

Mounted on skids, trailers or in containers these substations are delivered in the form of ready-to-connect complete assemblies. These are designed for grid code compliance and easy mobility. The solutions are available for voltage levels, MV to EHV and all power ratings.

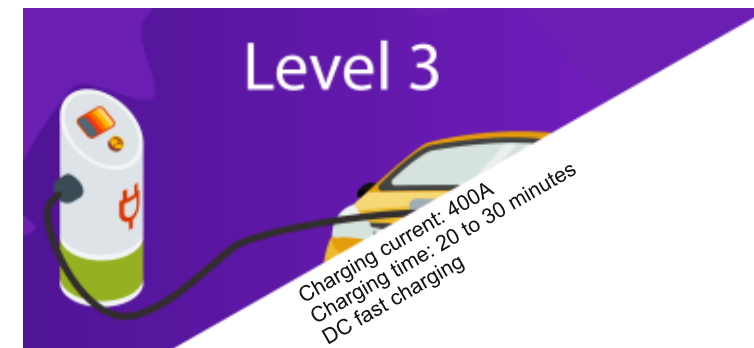
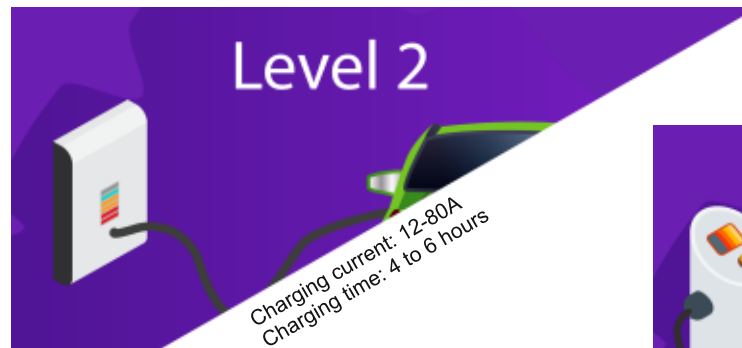
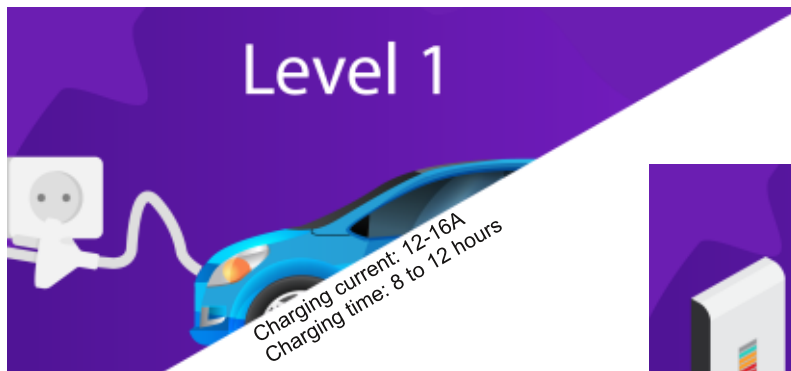
Factory-tested units can be installed and put into operation within shortest possible time.



10 - EV CHARGING

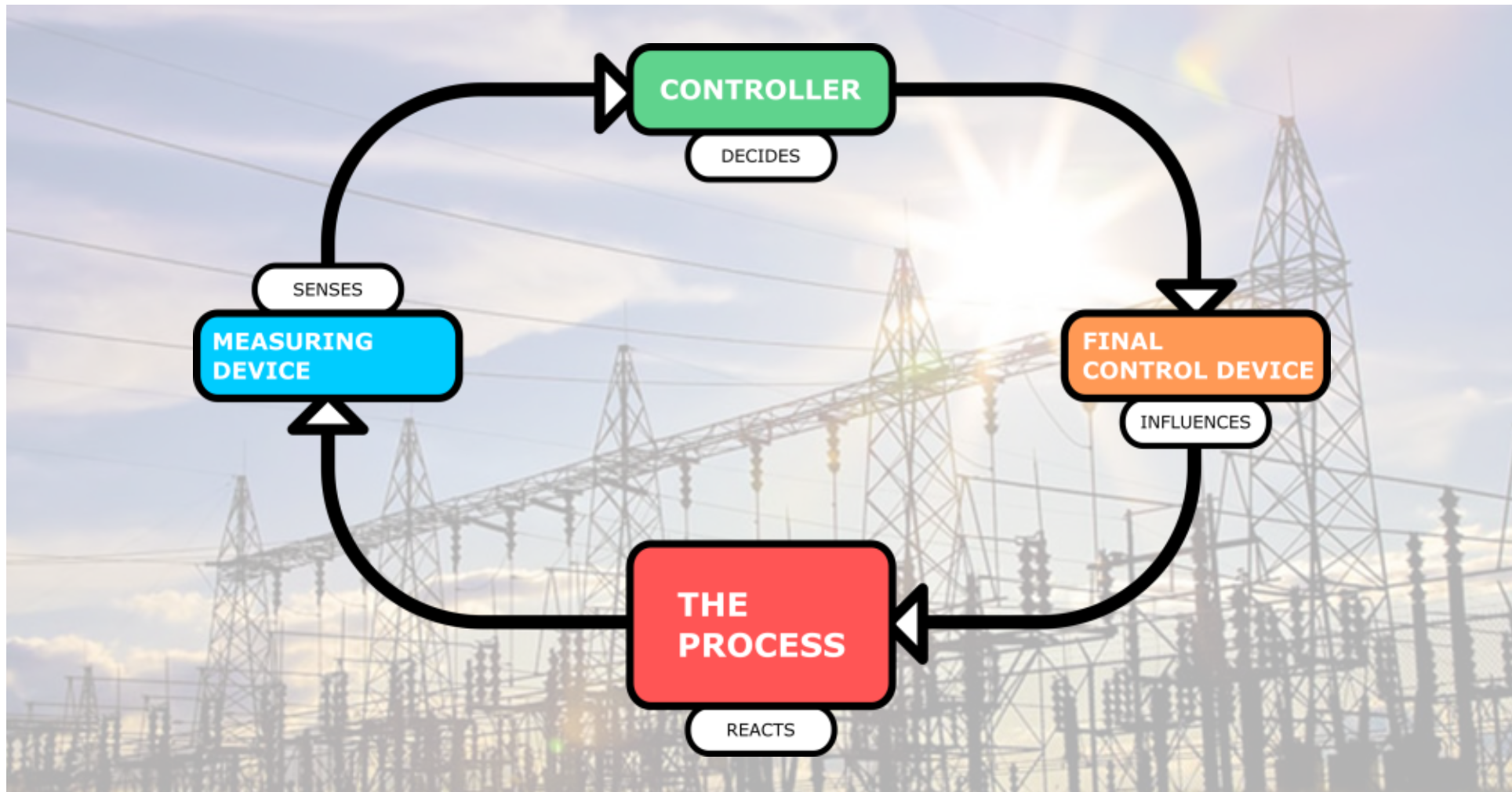
Environmental impact has forced the world to implement in all possible ways the initiatives to reduce Carbon Di Oxide emissions. All developed world and developing countries have started introducing electric vehicles for a gradual increase in its use alongwith the conventional vehicles. Governments on their part have also formulated Electric Vehicle Policies.

We have worked out relationships with our international partners to provide in due time EV Charging Stations to the upcoming customers. We are all set up to provide Level-1, level-2 and Level-3 charging stations for residential and commercial use and also to provide customized solutions along with specific needs.



11 - INDUSTRIAL & GRID AUTOMATION

We are providing Automation Services for Industrial Clients as well as on Utility level for Grid Automation through our dedicated division for Automation Services. Inquiries can be entertained and site visits for scope and solution discussions are made on request.



12 - DISTRIBUTION & INSTRUMENT TRANSFORMERS

We are partnering with renowned European manufacturers for the supply of Oil type & Dry type transformers:

Ratings: 10 – 3150kVA, Primary Voltage range upto 33kV.



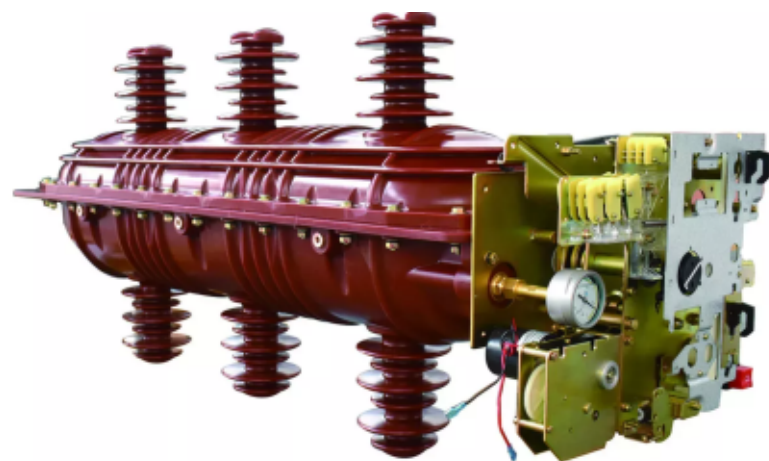
All types of Cast Resin Voltage Transformers upto 36kV:

- 12-24-36 kV, Single / Double Pole Insulated VTs, Block Type Design
- 12-24-36 kV, Single / Multiple ratio, Multicore CTs, Block Type Design



13 - MV ACCESSORIES, COMPONENTS & CABLE TERMINATIONS

- The Medium Voltage Metal-enclosed Switchgear primary parts, like SF6 Tank with switching devices and allied accessories.
- All types of Indoor- Disconnectors
Rated Voltage: 12 kV, 24 kV, 36 kV and 40.5 kV
Rated Current: 630 A up to 9000 A
- The Medium Voltage Metal-enclosed Switchgear accessories and devices, like:
 - Ø LED Lamp,
 - Ø Semaphore Indicator,
 - Ø Range of Voltage indicators, Short Circuit & Earth Fault Indicators,
 - Ø Integrated Control Equipment,
 - Ø Heaters etc. etc.



TESTING, COMMISSIONING AND MAINTENANCE

The testing, commissioning and maintenance of low and high voltage electrical equipment for each and every installation is done by a trained and qualified experienced engineer.

Our testing capability covers an extensive range of disciplines such as but not limited to:

■ CIRCUIT BREAKERS

- Ø Hipot Test.
- Ø Megger Test.
- Ø Primary Current Injection Tests.
- Ø Contact Resistance measurement.
- Ø Torque test.
- Ø Closing & Opening Time measurement.

■ SWITCHGEARS, SWITCHBOARDS, PANELBOARDS

- Ø AC Dielectric tests.
- Ø Megger test.
- Ø Bus Joints Torque test.
- Ø Bus Joints Resistance measurement.
- Ø Circuit Breaker testing
- Ø CT's - Ratio tests, Magnetizing curves.

- Ø VT's - Ratio & polarity checks.
- Ø Functionality checks.
- Ø Protection Relay testing.

■ CABLE INSTALLATIONS

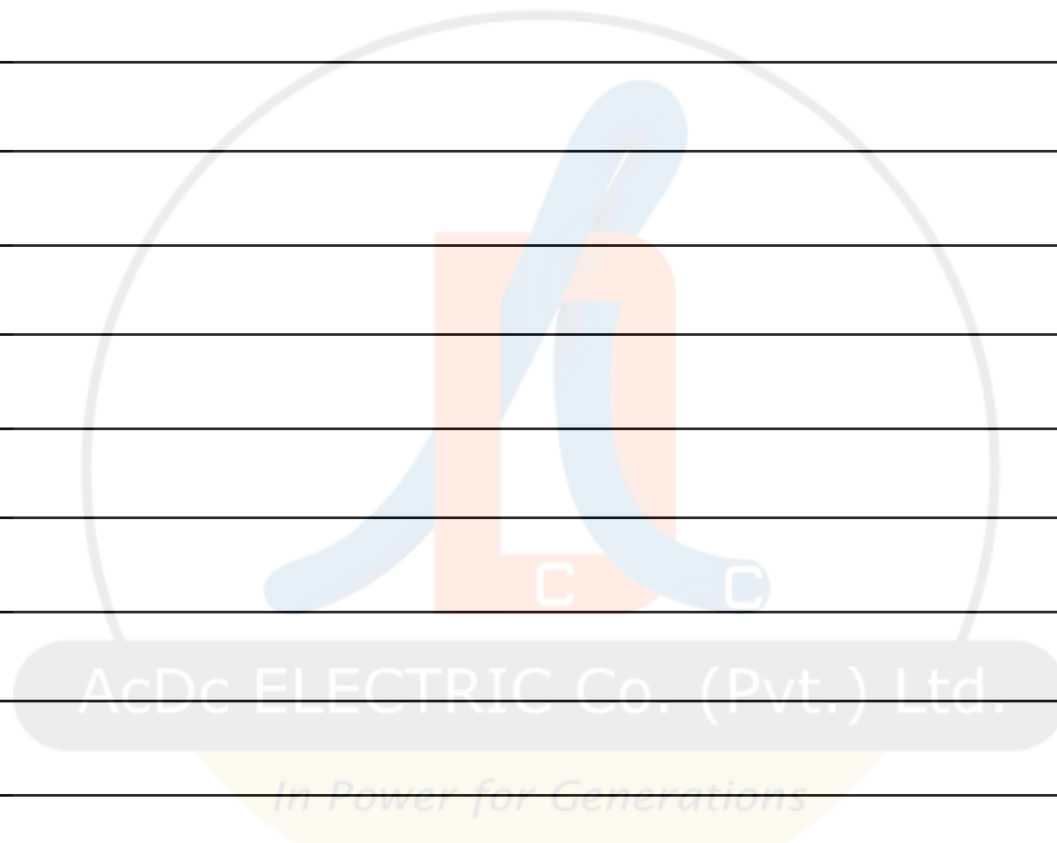
- Ø 1 kV and 5 kV Insulation tests.
- Ø DC Hipot test

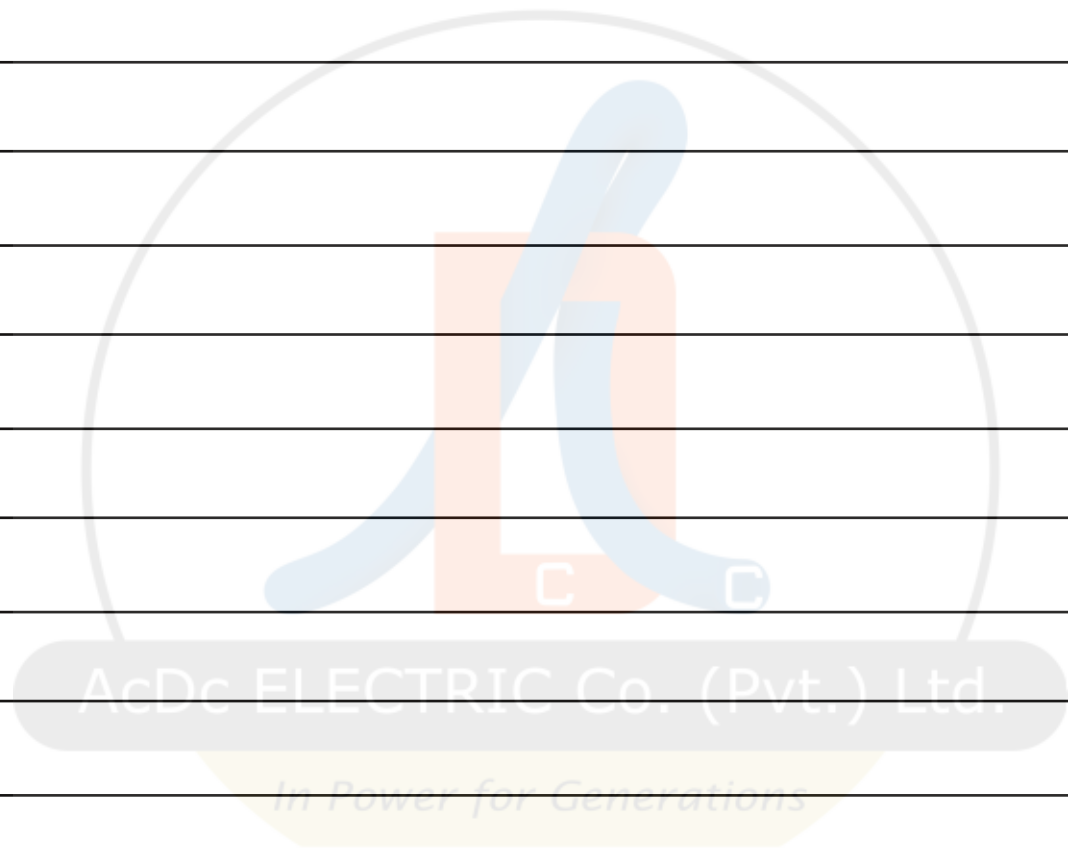
■ TRANSFORMERS – Distribution, Power, Dry Type Transformers, Instrument Transformers

- Ø HV & LV winding Insulation tests (Megger).
- Ø Hi-pot Test.
- Ø Turns Ratio Test.
- Ø Winding Resistance Measurement
- Ø Polarity Test
- Ø Oil sample and testing (electrical breakdown)

ADVANCED TECHNICAL SERVICES

- Power Quality Analysis and Management
- Protection Coordination Study
- Short Circuit Study







AcDc ELECTRIC Co. (Pvt.) Ltd.

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Office No.501, 5th floor,
Al-Fatima Chambers,
Shambu Nath Street,
off Sharah-e-Iraq, Saddar, Karachi

info@acdcelect.com
www.acdcelect.com