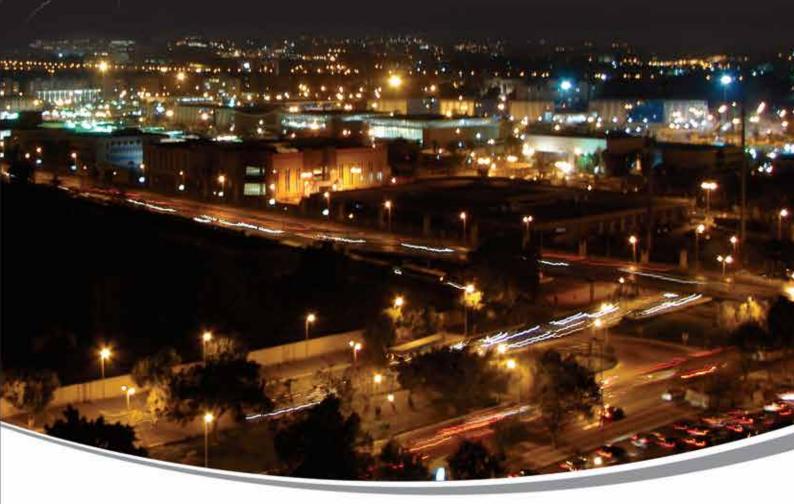


International Co. For Electrical & Electronic Industries S.A.E.

# **Power** of **Experience**





**Industrial Solutions** 

FULLY TYPE TESTED LOW & MEDIUM VOLTAGE SWITCHGEARS

Solution Partner

Building Technologie: **SIEMENS** 



#### **POWER OF EXPERIENCE**

Electro George has, over almost 30 years, gained the experience necessary to assure continuous growth, while maintaining an excellent local high technology background in diversified market segments, enabling us to maintain our lead.

Electro George was established in 1985 with a 14,000 Sqm manufacturing plant in Abu Rawash industrial zone with the latest technical capabilities.

Licensed from AEG – Germany as the sole licensed partner for LV & MV manufacturing in Egypt in 1988. LV migrated to GE in the mid 90's and license extended accordingly.

In the year 2000, a new license contract was signed with GE to be the only LV licensed partner for GE in Egypt. In November 2011 an agreement was reached with SIEMENS, for the manufacturing of their fully type tested MV range up to 24KV.

Our commitment to always ensure the reliability and performance of our products through the integration of technical support, production of customized products to meet customer requirements, and continuous quality assurance exemplified by ISO certification since 1996, has lead to the award of license agreements from various international companies such as AEG Germany, ALSTOM, AREVA, GE and SIEMENS.

Electro George's multinational approach, wide experience, and adherence to our philosophy "Power of Experience" proved to be the cornerstone that placed our company at the top of a varied list of competitors. We always succeed in maintaining and extending our local and international market share among the competition.

The newest trophy in our journey of mutual cooperation with international brands is being chosen by SIEMENS quality auditers as one of the best Licensed parteners over the world. In addition Electro George is the largest account holder for GE in Egypt, the 3rd in the Middle East and the 7th over the globe.

Looking forward we aim to maintain our excellent striving culture through;

- Integrating the knowledge of our international partners in our products.
- Strengthening our technical abilities to provide cost effective solutions.
- Offering a complete range of high quality products to meet customer demands

Electro George: Your local expert boasting international standards.







# Electro George

International Co. For Electrical & Electronic Industries S.A.E.

## **PHILOSOPHY**

Our corporate philosophy is "Power of Experience." This represents the wisdom and professionalism in our field, and the ability to deliver top quality products to our customers, thanks to our knowledge and history in the market.

## **VISION**

To be recognized as the first to anticipate, meet and exceed our customer's needs. It is our goal to make every interaction with our customer a new opportunity to better meet their expectations.

### **MISSION**

Becoming a full line switchgear manufacturer by carrying a matrix of products with international quality standards, developing an insight into our customer's needs and values and targeting regional market coverage through alliances with global market leaders.





#### **POWER OF EXPERIENCE**

Our highly qualified team boasts almost 30 years of experience in the field.

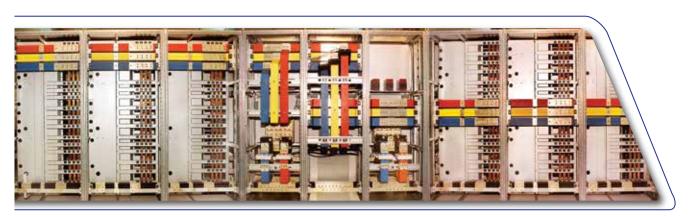
This team of more than 50 elite engineers with diversified product knowledge in all market segments is responsible for preparing all drawings required for the production process. This includes mechanical, electrical, assembly, wiring and drawing for approval.

Our planning and material departments coordinate their efforts to make sure of product availability, organize the production process, guarantee the highest possible efficiency and eliminate stoppage time.

Our production team of more than 20 highly qualified engineers & technicians makes sure of delivering all customers' requirements at premium quality.

Our factory is equipped with the latest technologies & advanced machinery including multi-task CNC machines for pending, cutting and punching in addition to a complete electrostatic painting line along with silvering and galvanization capabilities.

Our quality & after sales department empathizes the term "Never Compromise with Quality". The team of highly dedicated engineers & technicians provides the inspection and testing for each and every switchgear manufactured before customer delivery as well as providing onsite after sales services.





■ Electro George is ISO certified since 1996 and the certificate has been renewed according to the 2008 edition.

■ Both, the manufacturing plant and the Head Office are audited periodically.



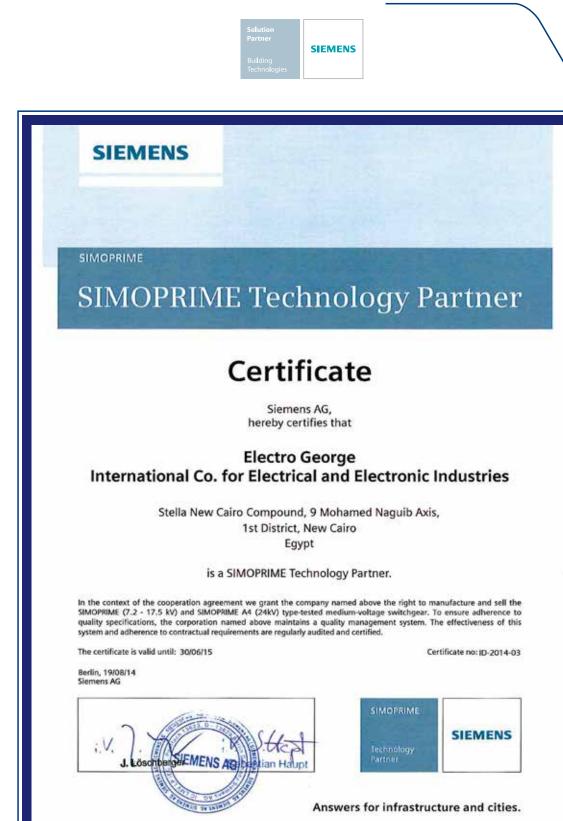


#### **SIEMENS LICENSE**

■ Licensed partner for SIEMENS MV Switchgear type SIMOPRIME 12KV and SIMOPRIME A4 - 24KV with the highest level of local integration.



■ The newest trophy in our journey of mutual cooperation with international brands is being chosen by SIEMENS quality auditers as one of the best Licensed parteners over the world.



#### **GE LICENSE**

■ Electro George has a history with GE lasting for almost 30 years of successful partnership being the first licensed partner for GE's LV equipment in Egypt.



■ Electro George is considered the largest partner for General Electric (GE) in Egypt, the third in Middle East and number seven all over the world for panel building activity.



#### **KEMA/DEKRA**

■ The Only manufacturing plant in Egypt to get KEMA/DEKRA type test Certificate (design Verification) according to IEC 61439 - 2 2011 for locally manufactured LV Switchgear type SEN Plus under license of GE.





# **KEMA** Quality

# TEST CERTIFICATE

International Co. for Electrical & Electronic Industries (Electro George) Issued to:

33 Ahmed Hishmet st. Zamalek 11211. Cairo

Egypt

For the product: Low-voltage switchgear and controlgear assembly

Electro George Trade name:

SE System / SEN Plus 2500A Type/Model:

Ue 400 V, Uimp 8 kV, IP42, horizontal busbar rating 2700 A, Icw 87 kA - 1 s, 50 kA - 3 s (MBB), vertical busbar rating 1600 A, 50 kA - 3s (VBB), for more Ratings:

details see annex

International Co. for Electrical & Electronic Industries (Electro George) Abou Rawash, 28 KM Cairo-Desert Road Manufactured by:

11211, Cairo

Egypt

Design verification Subject

IEC 61439-2:2011 Requirements:

Clauses 10.2.2, 10.2.3, 10.2.5, 10.2.7, 10.3, 10.4, 10.5, 10.9, 10.10.2.3.5, 10.11,

10.12, 10.13

The examination has been carried out based on a SEN Plus line up as per page 4 of the report nr. 2161711.10-INC. Tests are performed in 2011. Remarks:

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in report no. 2161711.10-INC, dated 14 May, 2013.

The examination has been carried out on one single specimen of the product, submitted by the manufacturer. The Attestation does not include an assessment of the manufacturer's production. Conformity of his production with the specimen tested by DEKRA is not the responsibility of DEKRA.

Arnhem, 14 May, 2013

Number: 2161711.110

DEKRA Certification B.V.

H.R.M. Barends Certification Manager

O Integral publication of this certificate and adjoining reports is allowed

DEKRA Certification 8.V. Utrechtseweg 310, 6812 AR. Arnhem. P.O. Box 5185, 6802 ED. Arnhem. The Netherlands T+31 88 96 83000. F+31 88 96 83000.



#### **SEN PLUS – POWER CENTERS**

- SEN PLUS type tested factory built assemblies designed and manufactured to meet the highest terms of safety, both for personnel as well as system protection.
- The comprehensive range of SEN PLUS system applications varies from withdrawable and fixed versions for power centers. The new solution can be mixed with Plug-in and draw-out technology in one column. The range of feeder module sizes varies from 6 24 functional units.
- Limitation of internal arc faults has been tested to IEC 61641
- The SEN PLUS system can meet the most demanding requirements up to 6300A.



#### **TECHNICAL DATA**

**ELECTRICAL DATA** 

Rated operational voltage (Ue) 690V AC / 600V DC

Rated frequency (f) 50 / 60HZ

Rated impulse overvoltage /

Category (Uimp) 8KV / III
Rated current horizontal busbars UP to 7800A
Peak withstand current (lpk) UP to 220KA
Short time withstand current (lcw) UP to 100KA

Rated current vertical busbars 850 / 1200 / 1550 / 1900A

MECHANICAL DATA

Modularity (1 E = 25 mm)Dimensions (Height) 2000 / 2200 mm

(Depth) 600 / 800 / 1200 mm

(Width) 400 / 500 / 600 / 800 / 1000 / 1200mm

Degree of protection IP30 UP to IP54 Form of internal separation UP to form 4b

Colour RAL 7032 - 7035 / Epoxy polyester

STANDARDS

Type tested IEC 61439 - 2, IEC 60439 - 1

DIN EN 60439 -1,VDE 0660 Teil

500, BS EN 60439 -1

Internal arc tests IEC/TR 61641

- Commercial (Warehouses, Malls, Schools, Offices, Hospitals, Airports)
- Industry (Printing, Pharmaceuticals, Chemical, Paper, Marine, Automotives, Oil & Gas)
- Power Plants & Substations, Energy Distribution, Telecommunications, Public Transport
- Utilities (Water Treatment Plants, Waste Management)









#### **SEN PLUS – CONTROL CENTERS**

■ SEN PLUS Control Centers are fully type tested switchboards designed and manufactured to meet all motor applications providing the highest level of safety for both personnel and system protection.



- The comprehensive range for SEN PLUS Control Centers includes fixed, plug-in and fully withdrawable patterns that can be equipped with a complete motor starter up to 250 KW/ feeders up to 800A.
- The modular design of SEN PLUS with a 25mm module step allows high flexibility and compact design for different applications.

■ The GE patent RACK-IN/OUT BEHIND DOOR technology provides maximum safety for the operator.





#### **Control Center Applications**

- Power Generation Plants
- Heavy Industries (Petrochemicals, Metals, O&G)
- Infrastructure (Airports, Railways, Ports)
- Utilities (Water Treatment & Waste Management)







#### SEK / SEV 32

■ SEK and SEV 32 are the type tested low voltage switchboards for power system distribution which gives flexible in planning, safty and maximum operator protection.



#### Standard switchboard type SEK

Main power distribution, modular (compartmented) construction for currents up to 6300A.

■ Motor control center type SEV 32

Motor control center with fully withdrawable modules. All switching, control and protection devices are mounted as one functional unit within one module. Each cubicle can house up to 32 withdrawable units from a range of 7 standard module sizes for power up to 450 KW.

#### **TECHNICAL DATA**

**ELECTRICAL DATA** Rated operational voltage (Ue) AC 690 V / DC 600 V Rated current (le) UP to 6300 A Rated insulation voltage (Ui) UP to 1000 V Rated Short - time UP to 100KA (SEK) / withstand current (lcw) UP to 80KA (SEV 32) Rated peak withstand UP to 220 KA (SEK) / (lpk) UP to 176 KA (SEV 32) Current Rated Impulse

(Uimp)

8 KV / III

MECHANICAL DATA Dimensions (Height) 2200 mm (Depth) 600,800,1000 and 1200 mm (SEK) 600 mm (SEV 32 simplex) and 1000 mm (SEV 32 Duplex) (Width) 400,500,600,800,1000 and 1200 mm (SEK) 800,1000 and 1200 mm (SEV 32) Protection degree IP20 UP to IP54 Form of internal separation from 1 up to form 4b

#### **APPLICATIONS**

Over voltage/ category

- Power Plants Chemical, Petrochemical
- Steel Industry, Paper Mills, Printing Plants
- Water Treatment, Filter Plants

#### **STANDARDS**

Type- tested low voltage switchgear IEC 60439 -1, DIN EN 60439 -1 and controlgear Combinations (TTA) VDE 0660 PART 500 Arc fault protection IEC 61641

- Oil Platforms
- Universities and Hospitals
- Airports







#### **QUIXTRA 4000**

- The new concept for assembled LV power distribution boards for high commercial and industrial environments.
- With 9 different floor standing enclosures, combination of 3 different widths and 3 depths, as well as busbars and functional units; Quixtra 4000 provides the ease of integration of all types of low voltage electrical devices for various applications.
- The combination of the QuiXtra 4000 enclosure and original GE LV electrical devices are certified according the new standard IEC 61439 - 2.
- For ease of incoming and outgoing cable connection, the roofs have different types of cable entry plates available. In addition, the bases are available with entry cable plates, for bottom incoming or outgoing.



#### **TECHNICAL DATA**

**ELECTRICAL DATA** Rated Operational Voltage (Ue) 415V, 690V Rated Insulation Voltage (Ui) 1000V **Rated Current** 4000A (ln) Rated Frequency (F) 5060/HZ Rated Current of the Busbar System 4000A Rated Short Time Withstand Current (lcw) max 85 KA/1 sec MECHANICAL DATA **Protection Class** Pollution Degree 3

Segregation Up to form 3b **Protection Degree** w/o door IP30, IK08 Plain door IP30, IK09 plain door IP55, IK09

Transparent door IP30, IK08 Transparent door IP55, IK08

**STANDARDS** IEC 61439 - 2

- Commercial Buildings (Malls, Hospitals, Schools)
- Industrial Facilities (Pharmaceutical, Automotive, Mills) Energy Distribution
- Housing, Residential Complexes







#### **QUIXTRA 630**

- Quixtra 630 has been developed as a range of system enclosures with complete solutions up to 630A for commercial, residential as well as industrial environments.
- Reliable, simple, flexible, and easy to use system enclosure with a fresh and attractive design that integrates perfectly into commercial and residential environments.
- The range comes in both wall-mounting and floor-standing enclosures.
- The busbars and functional units can easily integrate all types of LV electrical devices up to 630A for different applications.
- The combination of the QuiXtra 630 enclosure and original GE LV electrical devices are certified according the new standard IEC 61439 2.

# Electro George

#### **TECHNICAL DATA**

**ELECTRICAL DATA Rated Operational Voltage** (Ue) 415V Rated Insulation Voltage (Ui) 690V **Rated Current** (In) 630A Rated Frequency 5060/HZ Rated Current of the Busbar System 630A **Rated Short Time Withstand Current** (lcw) max 30 KA/1 sec MECHANICAL DATA

Protection Class I

Pollution Degree 2

Segregation Form 1 and Form 2 Protection Degree w/o door IP30, IK08 Plain door IP40, IK09

Plain door IP40, IK09 Pransparent door IP40, IK08 Transparent door IP43, IK08

STANDARDS IEC 60439 - 1

- Commercial Buildings (Hotels, Shopping Centers)
- Residential (Compounds, Touristic Villages, Towers)
- Small Industrial Plants







#### **MODULAR 200**

- The type tested distribution board (load center) is manufactured to British & European standards.
- Modular 200 is durable structure either for wall or flush mounted sheet metal powder coated finish construction.
- A versatile modular system which enables a very flexible approach to the selection of incomers up to 200 A, by MCB or MCCB.
- The modules extension boxes design is also available to install modular control devices.
- Modular 200 equipped with one piece ,3 phase pan assembly bus bar rating 200A accepts standard 6KA, 10KA or 25KA MCBs.

#### TECHNICAL DATA

**ELECTRICAL DATA** 200 Bus bar rating (A) Bus bar short circuit capacity (KA) 16 Rated voltage (V) 415 E+N outgoing terminal capacity (mm2) 25 E+N incoming cable capacity (mm2) 70 4, 6, 8, 12, 18, 24 NO - OF TP Ways

STANDARDS IEC 60439 -3 BS 5486 MECHANICAL DATA

Dimensions (Height) 534, 588, 642, 750, 912, 1136 mm

 (Depth)
 135 mm

 (Width)
 500 mm

 Ingress protection (IP)
 40

 Enclosure colour (Ral)
 7032 - 7035

Light gray

lectro | ¬eorge

- Commercial (Shopping Centers, Restaurants, Hotels, Offices)
- Work Shops
- Hospitals
- Residencial (Urban, Touristic)







#### **MODULA 630K - MODULA IP55**

- Type tested distribution boards for indoor/outdoor applications up to 630A.
- Modula 630K is a wall-mounted, indoor sheet metal enclosure that offers due to its modularity numerous practical advantages to facilitate mounting and wiring operations.
- Modula IP55 is a wall-mounted and floor standing metal enclosure, suitable for both indoor and outdoor applications that serve places with limited space.
- The system is made of sheet steel and is protected by a coating of epoxy paint. The enclosures are available in various widths and heights in order to serve a diversified range of applications.
- All components can be mounted easily on the sheet-metal rear panel by using the appropriate functional units.



#### **TECHNICAL DATA**

ELECTRICAL DATA		
Rated Operational Voltage	(Ue)	Up to 690V
Rated Insulation Voltage	(Ui)	1000V
Limits of Operation	(Uimp)	8 KV
Rated Frequency	(F)	5060/HZ
Rated Current of the Busbar System		Up to 630A
Rated Short Time Withstand Current	(lcw)	30 KA/1 sec
Rated Peak Current	(lpk)	63 KA

STANDARDS IEC 60439 -1

MECHANICAL DATA	630K	IP55
Dimensions (Height) mm (Depth) mm (Width) mm	545 to 1910 250 600, 900	950 to 1750 275 650, 900
Degree of Protection	IP41	IP55
Painting	Epoxy Coating	Epoxy Coating
Color	Ral 7032 -7035	Ral 7032 -7035
	Ral 9005 (bases)	Ral 9005 (bases)
Compartment	Form 1 & 2	Form 1 & 2

#### **APPLICATIONS M-630K**

- Infrastructure (Street Lighting, Sub-Distribution Panels, Pillars)
- Commercial (Hotels, Shopping Centers, Hospitals)
- Housing, Touristic Villages

#### **APPLICATIONS M-IP55**

- Energy Distribution
- Small Industrial Plants/Facilities
- Outdoor Applications







#### **SIMOPRIME**

- Designed to meet customer requirements, SIMOPRIME provides reliable solutions for all MV applications with user safety on top list.
- SIMOPRIME is tested to IEC 62271 200 with compartmented design preventing the risk of contact to live parts during maintenance and operations.
- Backed up by the verified testing for the resistance against internal arc flash events, SIMOPRIME provides maximum safety for operator and equipment.
- SIMOPRIME provides a wide range of available ratings from 7.2 to 17.5 KV up to 3600A rated current and 40KA short circuit level.



#### **TECHNICAL DATA**

ELECTRICAL DATA

Rated Operational Voltage 7.2 to 17.5 KV

Rated Impulse Withstand Voltage 60 to 95 KV

Rated Current Up to 3600A

Rated Frequency 5060/HZ

Rated Short Time Withstand Current 40KA/3 sec

Rated Peak Withstand Current 100KA

STANDARDS IEC 61439 - 2

CONSTRUCTION	
Partition Class	PM
Loss of service continuity	LSC2B

INTERNAL ARC CLASSIFICATION

Accessibility
-Front Type A
-Rear Type A
-Lateral Type A
Test Current 25 / 31.5 / 40 KA
Arc Duration 0.1 / 1.0 sec

#### **APPLICATIONS**

- Power Generation
- Heavy Industries

- Oil & Gas (Onshore/Offshore)
- Energy Distribution





SIEMENS



#### **SIMOPRIME A4**

- Designed to meet customer requirements, SIMOPRIME provides reliable solutions for all MV applications with user safety on top list.
- SIMOPRIME A4 is tested to IEC 62271- 200 with compartmented design preventing the risk of contact to live parts during maintenance and operations.
- Backed up by the verified testing for the resistance against internal arc flash events, provides maximum safety for operator and equipment.
- SIMOPRIME A4 provides wide range of available ratings up to 24KV up to 2500A rated current and 25KA short circuit level.



#### TECHNICAL DATA

ELECTRICAL DATA
Rated Operational Voltage 24 KV
Rated Impulse Withstand Voltage 125 KV
Rated Current Up to 2500A
Rated Frequency 5060/HZ
Rated Short Time Withstand Current 25 KA/3 sec
Rated Peak Withstand Current 63 KA

STANDARDS IEC 61439 - 2

CONSTRUCTION	
Partition Class	PM
Loss of service continuity	LSC2B
INTERNAL ARC CLASSIFICATION	
Accessibility	
-Front	Type A
-Rear	Type A
-Lateral	Type A
Test Current	25 KA
Arc Duration	0.1 / 1.0 sec

- Power Supplying Utilities
- Water and Waste Water Treatment Plants
- Petrochemical Plants
- Infrastructure (Airports, Ports, Railways)







Electro George has been working in the Egyptian market for almost 30 years delivering the best quality LV & MV switchgears serving different market segments and meeting different customer needs.

Depending on the customer need and the different type of application; Electro George has been designing, manufacturing, testing, and delivering thousands of MV switchgears, LV distribution boards and Motor Control Centers to the major customers in both Egyptian and International markets.

Various market segments included:

- Electricity & Energy
- Infrastructure
- Industrial Plants
- Oil & Gas
- Construction & Building
- Export

With this long history of successful cooperation with major clients, end users and consultants; Electro George has maintained first class quality products being delivered and in operation in different sectors for almost 30 years.









#### **PROJECTS**

#### **ELECTRICITY & ENERGY SAMPLE PROJECTS**

- El Suez Thermal Power Plant
- Cairo North Generation Plant
- Oyoun Moussa Generation Plant
- El Eslah, Sanoras, El Seyoof Transmission Substations
- Approved with ALL Distribution, Transmission & Generation companies
- Part of an elite group of approved companies in generation plants





#### **CONSTRUCTION & BUILDINGS SAMPLE PROJECTS**

- City Stars Commercial Complex
- Nile City Towers
- Barclays Bank New HQ
- Marassi Touristic Compound North Coast
- Mivida Residential Compound New Cairo
- JW Marriott Mirage Hotel
- Abu Dhabi National Bank HQ









#### **PROJECTS**

#### **INFRASTRUCTURE & PORTS SAMPLE PROJECTS**

- Largest Water Sanitation Plant in Middle East (Gabal Asfar)
- Cairo Airport Seasonal Flight Building
- Cairo Airport Maintenance Hangers
- Dekheila port Alexandria
- BAMAG Treatment Plants (Berkat al-Sabei, Minya al-Kamh, Tala, Al Shohada)
- Shoubra & Ain Shams Waste Water Treatment Plants





#### **INDUSTRIAL, OIL & GAS SAMPLE PROJECTS**

- MIDOR Refinery Plant
- Suez Oil Petroleum Company
- Alex Petroleum Co.
- Chipsy factory (PepsiCo)

- Alex Carbon Black
- Phi Cosmetics factory
- Abu Kurkas, Naga Hammadi, Hawamdeyah Sugar Factories









#### **EXPORT**

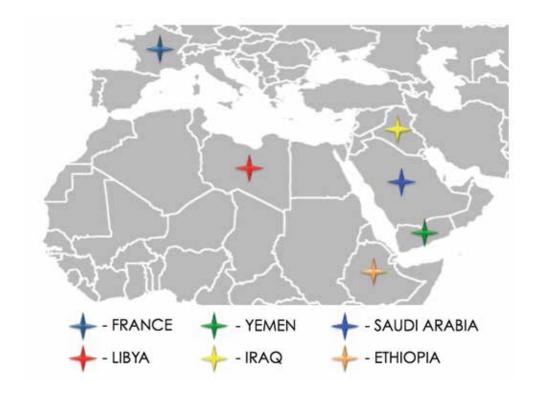
Electro George has excelled due to its high quality standards and expertise.

This has allowed Electro George to thrive not only in the local market but internationally as well.



We have completed projects in several countries outside of Egypt including – but not limited to – France, Saudi Arabia, Yemen, Iraq, Ethiopia and Libya.

Our scope of supply varied from MV Switchgears, LV Main Panels, Motor Control Centers and final distribution boards.













#### **Head Office**

9th Mohamed Naguib Axis, inside commercial center of Stella New Cairo Compound, New Cairo City, Cairo, Egypt Tel. +2 02 25308402 Fax +2 02 25308209

#### **Factory**

Industrial Zone, Abou Rawash, Km.28, Misr Alexandria Desert Road Tel. +2 02 35390461/2 Fax +2 02 35390203

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