



G&W Electric Company Overview

Value Add Solutions

Technological Advancements

Product Portfolio

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References



Company History

G&W's original machine shop in Chicago, IL and the development of the first porcelain pothead Down - 2004 John H. Mueller President - 1994 Owner - 2004 Harry Gear Paul Williams John D. Muster 10777 20002

Founded by two electric utility distribution engineers from Commonwealth Edison in Chicago John D. Mueller President and Owner



Company Growth

1925

G&W moved to

larger facility in

Chicago

1956

G&W moved to larger facility in Blue Island, IL

1997

First Shanghai G&W Electric facility opens

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2004

G&W opens new sales office in New Delhi, India

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2019

2006

Moved to larger, new G&W Electric Shanghai facility

2008 40K sq. ft. facility

Potosi, Mexico

2012 G&W moved to opened in San Luis

larger facility in **Bolingbrook**, IL

G&W Canada moved into a new facility with 210K sq. ft.

2015

Headquarter expansion in Bolingbrook, IL, with an additional 105K sg. ft.

G&W Electric acquires Altea S.r.I. and Tozzi **Electrical Equipment**

G&W Electric has operations around the globe

What We Do



Manufacturer of innovative power grid solutions, including the latest in load and fault-interrupting switchgear, reclosers, high accuracy sensors, system protection equipment, cable accessories and power grid automation.



Every Engagement Starts With Listening

We take a consultative approach, working hard to thoroughly understand your application and your goals. That's why we always start with a conversation about your needs, goals and vision for the future.

Our structure and our processes have always been focused on listening closely to and answering customer needs.



Value-Add Services – Our Personal Touch





Technological Advancements



Rich History of Innovation



Introduced manual oil switches

Introduced oil-fused cutouts to protect 5kV underground systems Introduced SCADA switches, the first electronically controlled fault interrupters Introduced Trident[®] w/SafeVu[™], the first switch with visible break feature and soliddielectric insulation Introduced the new Trident-SR[®] w/SafeVu[™]

CLiP-LV[®] received Standard(s) for Safety: UL 3801, Outline of Investigation for Fault Limiters

Advancing the Next-Generation Grid

We invest heavily in research and development to help create solutions for tomorrow's smart grid, which means you can find best-in-class power grid automation solutions for your unique need. "

We contribute to the advancement of the nextgeneration grid through investment and development of safe, reliable and environmentally friendly solutions.



Growth Strategies

Current Grid Challenges:

- More distributed grid
- Two-way power flow
- Much more control needed
- Real-time monitoring

Solutions:

- Sensing technologies
- Expanding the "maintenance-free" concept battery free
- Self-powered technologies power/line harvesting equipment
- Alternative SF6 technologies
- Range expansion of over-current devices



Switchgear Product Portfolio



Ecosmart OSD – Outdoor Gas Insulated Switch Disconnetor

Electrical Characteristics	
Rated Voltage	12 - 24kV
Rated Current	630A
Short time withstand current	16-20 kA 1 sec.
Mechanical Endurance Class	M2
Electrical Endurance Class	E3

Main Features:

Full stainless steel enclosure

Wide back safety valve

Automation available through motorization

Internal arc tested

Safe application in all climate conditions

Easy installation

Low maintenance

ENEL DY806 and GSCM003 homologated





Ecosmart MIX – Air Insulated MV Switchgear

Electrical Characteristics			
Rated Voltage	12kV	24kV	
Rated Current	630-1250	630-1250	
Short time withstand current	16-20-25 kA	16-20 kA	
Mechanical Endurance Class	M1 for Line Switch, M0 for Earth Switch		
Electrical Endurance Class	E3 for Line Switch, E2 for Earth Switch		
Mechanical Endurance Class CB	M1 -	- M2	

Main Features:

Full stainless stee	l enclosure of the	Load Break Switch
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Pressure absorber

Wide overpressure safety valve

Vacuum chambers produced by the segment global leader MEIDENSHA

Vacuum interrupters are not affected by the external environment

Assembled on a support frame equipped with wheels to allow its removal from the panel

Modular sections are extensible on the top or laterally

ENEL homologated





Ecosmart GIS – Compact & Extensible Gas Insulated MV Switchgear

Electrical Characteristics			
Rated Voltage	12kV	17.5kV	24kV
Rated Current	630 A	630 A	630 A
Short time withstand current	16-20-25 kA	16-21 kA	16-20 kA
Mechanical Endurance Class	M1 for Line Sw M0 for Earth Sw		
Electrical Endurance Class	E3 for Line Sw E2 for Earth Sw		
Mechanical Endurance Class CB	M1 – M2		

Main Features:

Long service life and high reliability, maintenance-free active parts

Insensitive to external environment

Stainless steel tank

Vacuum chambers produced by the segment global leaders EATON or MEIDENSHA

Standard IAC AFLR construction, overpressure duct available as option

Compact sections, up to 5 functions in one tank

Modular sections extensible on the top or laterally

ENEL homologated





QMTC – MV Metal Clad Air Insulated Switchgear

Electrical Characteristics			
Rated Voltage	12 kV	17,5 kV	24 kV
Rated Current (maximum)	4000A	3600A	2500A
Short time withstand current (maximum)	50kA 3 sec	50kA 3 sec	31,5kA 3 sec
Internal Arc withstand	50kA 1 sec	50kA 1 sec	31,5kA 1 sec
Standards	IEC 62271-200 IEC 62271-100 IEC 60470 IEC 62271-102 Shell DEP 33.67.51.31.		
Main Features:			
Loss of service continuity category: LSC2B			
Partition class: PM			
Internal Arc Classified (IAC): AFLR			
Internal partition degree of protection: IP42			
Available for use with generators			





QMM90N - LV Motor Control Center & Power Center

Electrical Characteristic		
Rated Voltage	690 V	
Rated Current	6000A	
Short time withstand current	100kA x 1 sec	
Internal Arc withstand	100kA x 0,5 sec	
Standards	IEC 61439-1 2009 IEC 61641-2008 IEC 947 Shell Dep 33.67.01.31	
Main Features:		
Loss of service continuity category: LSC2B		

Form 4

Internal Arc Classified (IAC): AFLR

Internal partition degree of protection: IP3X and IP4X

Application specific design





Padmount and Subsurface Switchgear

Seamless integration for custom power grid automation solutions

Maintenance-free design

Submersible and weatherproof for harsh environments





Padmount and Subsurface Switches

Full suite of Trident[®] solid dielectric or SF6 insulated switches

Safe design by eliminating the need for elbow removal when using the optional SafeVu[™] integral visiblebreak

Optional high-speed magnetic actuator operations in <3.5 cycles





Switchgear Components Product Portfolio



Ecosmart PB – Gas Insulated Switch Disconnectors

Electrical Characteristics			
Rated Voltage	12 kV	24kV	
Rated Current	630-1250A	630-1250A	
Short time withstand current	16-20-25 kA	16-20 kA	
Mechanical Endurance Class M1 for Line Sw M0 for Earth Sw			
Electrical Endurance Class E3 for Line Sw E2 for Earth Sw			
Main Features:			
Full stainless steel enclosure			
Wide back safety valve			
Integrated capacitive dividers for "S" type			
Earthing switches with making capacity and with capacitive dividers for "FS" and "CBS" type			
Possibility of Motorization for "FS" type			
"FS" type operating mechanism standard equipped with opening and closing push buttons			
Option of Opening and Closing coil for "FS" type			
Higher insensitiveness to external environvent as most of the switching circuit are insulated in SF6 filled tank			
Reduced maintenance			





Ecosmart VCB L – Vacuum Circuit Breaker for Secondary Distribution

Electrical Characteristics	
Rated Voltage	12 - 24kV
Rated Current	630-1250-1600A
Short time withstand current	16-20-25 kA
Mechanical Endurance Class	M1 – M2
Operation sequence	O - 0,3sec - CO - 3min - CO

Main Features:

Long service life and high reliability

Exceptional electrical life thanks to vacuum technology

Vacuum chambers produced by the segment global leader MEIDENSHA

Vacuum interrupters insensitive to external environment

Assembled on a support frame equipped with wheels to allow its removal from the panel

Built-in spring charging lever

ENEL DY505 homologated





Ecosmart VCB F - Fixed & Withdrawable Vacuum Circuit Breaker

Electrical Characteristics			
Rated Voltage	12 kV	17,5 kV	24 kV
Rated Current	2500	2500	2500
Short time withstand current	31,5 kA	31,5 kA	25 kA
Mechanical Endurance Class	M1 (2000) – M2 (10000)		
Operation sequence	O - 0,3sec - CO - 3min - CO		

Main Features:

Long service life and high reliability

Exceptional electrical life thanks to vacuum technology

Vacuum chambers produced by the segment global leader MEIDENSHA

Vacuum interrupters insensitive to external environment

Available in fixed and removable version

Built-in spring charging lever

ENEL DY523 homologated





Ecosmart VG

Electrical Characteristics	
Rated Voltage	12 - 24kV
Rated Current	630-800A
Short time withstand current	16-21kA at 12kV, 1 sec 16-21kA at 17,5kV, 1 sec 16-20kA at 24kV, 1 sec
Mechanical Endurance Class	M0 for disconnector, M2 for CB
Electrical Endurance Class	E2 for disconnector, E2 for CB
Operation sequence	O - 0,3sec - CO - 3min - CO

Main Features:

"3 in 1 design". Disconnector - Vacuum Breaker - Earthing Switch in a single stainless steel tank

Reduced dimensions, transport costs and installation footprint

Capacitive dividers integrated in the isolators, upper and lower

"PM" partition assuring the complete panel grounding

Earthing switch SF₆ insulated and embedded in the stainless steel tank

Higher insensitiveness to external environvent

ENEL DY800 homologated





Reclosers & Sensors Product Portfolio



Viper[®] – Solid Dielectric Reclosers

Overhead, substation and dead-front padmount designs

Flexible design for full customization

Seamless integration for custom power grid automation solutions

Ease of installation with site-ready design







High accuracy 0.5% voltage measurement

- Conservation Voltage Reduction (CVR)
- End of Line, Substation Metering

Reclosers as a metering point

- Power Quality
- Volt-Var Optimization (VVO)
- DER Interties

Alternative to metering class voltage transformers

- More compact & lightweight
- Safer, Low Energy Analog voltages





Current Limiting System Protection Product Portfolio



CLiP[®] – System Protection Equipment

Significant fault energy reduction (99%)

Ideal system protection for a variety of applications

- Fire mitigation
- Arc flash reduction
- Overdutied equipment protection

Can be installed outdoors or within a metal clad switch enclosure

Available for low- and medium-voltage applications





T&D Cable Accessories Product Portfolio



Cable Terminations and Joints

Full suite of pipe-type cable accessories

• Market leader in high-voltage pipe type terminations

Medium- and high-voltage solutions up to 500kV

- Extruded
- Pipe type

In-house expertise

 IEEE committee members – contributing on the development standards





Power Grid Automation



LaZer[®] – Power Grid Automation Solutions

Scalable solutions for any application

Distributed or centralized architecture for monitoring and control, including FLISR

Vendor-agnostic integration of relays and communication equipment

Custom programming, system-tested and upgradable





LaZer[®] Automation Benefits

System integration with single point of contact for new and existing components (reclosers, switches, radios, SCADA systems and GIS import)

- Smooth transitioning from manual to semi automation to fully automatic operations
- Up to 5-year parts and performance warranty on entire solution
- Factory Acceptance Testing with customer present prior to shipment for every order; optional Site Acceptance Testing





Two Companies, One Solution



114 years of industry experience

Leading supplier of power grid solutions

- Reclosers
- Padmount and vault automated switches



Survalent.

54 years of experience

Installed at 600+ utilities in over 30 countries

SCADA, DMS and OMS software

Over 70 software modules

- FLISR
- Load flow

Two Companies, One Solution

LaZer®

Combined expertise in automated switch and automation software



Full System Integrator – Vendor Agnostic

















Services



Factory Acceptance Testing (FAT)

Comprehensive Testing:

- Switches and reclosers
- Controls
- Communication devices
- Test equipment

G&W Factory Test Cell (3,600 sq. ft.)

Your equipment configured to your application

Tested for proof of reliability under any condition





Site Acceptance Testing (SAT)

Real-time view of how your system works

G&W experts onsite for troubleshooting and questions

Operator training





References



Global Customer References





Thank You

