

Top 100  
Global  
Innovator  
for 10 years

# LINE CARD

Power Solution



**LS** ELECTRIC

# FUTURING SMART ENERGY

## FUTURING

Leading the way with new innovations that exceed our customers expectations.

## SMART

Creating an efficient and convenient future through convergence of Information and Communication Technology(ICT) and integration of sophisticated technologies.

## ENERGY

Creating an abundant future by delivering safe and clean energy.



Power / Automation Sector  
Total Solution Provider



Smart Grid, Smart Factory,  
Smart Building  
Solution Leading Company



Smart Energy Global Leader  
including ESS, EMS, HVDC, PV

LS Group is a global conglomerate based in South Korea. Spun off for growth from LG Group in 2003. LS is an industry leader in electric power, automation, machinery, material and energy.



LS Group	
EMPLOYEES	25,000
AFFILIATES	132
SALES	28 B USD
TOTAL ASSET	19 B USD

EMPLOYEES	3,112
SALES	2.6 B USD
OPERATION PROFIT	0.15 B USD

\* Financial figures in 2022

## PT&T | POWER TESTING & TECHNOLOGY INSTITUTE



**6th largest testing capacity lab in the world**

Short circuit test capacity : 4,000MVA



**Global standard activities with World Standards: IEC, UL, IEEE and many more.**

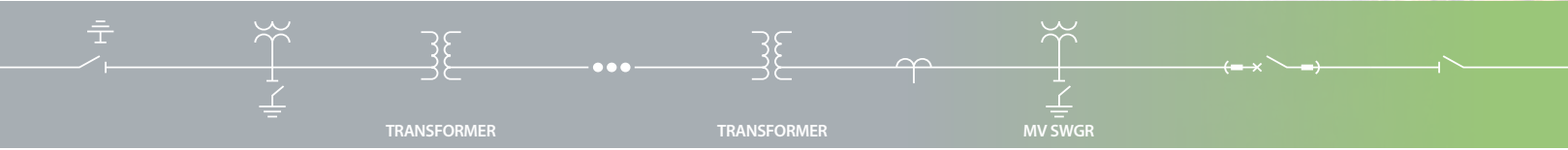


**Pursuing global approvals with international certifications.**



\* KOLAS : Korea Laboratory Accreditation Scheme

\* ILAC-MRA : International Laboratory Accreditation Cooperation - Mutual Recognition Arrangement



### High Voltage Transformer



High levels of reliability and efficiency

#### Key Specification

- Up to 550kV 800MVA
- Indoor / Outdoor
- Oil immersed (Mineral / Ester)
- Special purpose
  - Scott Transformer
  - HVDC converter Transformer
  - Mobile Transformer
- ANSI/IEEE C57

### Medium Voltage Metal-Clad Switchgear



World Smallest Footprint (24" Width) UL Listed Arc-Resistant MV SWGR

#### Key Specification

- **5/15kV AR Gear**
  - 1200A, 25/31.5kA (W24", 1/2 High)
  - 2000A, 25/31.5kA (W24", 1/2 High)
  - UL Listed, IEEE C37.20.2/C37.20.7
- **38kV AR Gear**
  - 1200/2000A, 31.5/40kA (W42", 1 High)
  - IEEE C37.20.2/C37.20.7

#### Key Specification

- **5/15kV NAR Gear**
  - 1200/2000A, 25/31.5/40/50kA (W26", 2 High)
  - 1200/2000/3000A, 25/31.5/40/50kA (W36", 2 High)
  - 4000A, 25/31.5/40/50kA(W47.2", 1 High)
  - UL Listed, IEEE C37.20.2, ANSI C37.55
- **27kV NAR Gear**
  - 1200/2000/2500/2750A, 25/31.5/40kA (W36", 2 High)
  - UL Listed, IEEE C37.20.2, ANSI C37.55
- **38kV NAR Gear**
  - 1200/2000A, 31.5/40kA (W42", 1 High)
  - IEEE C37.20.2

### Medium Voltage Metal-Enclosed Switchgear



High performance and durability, front accessible structure for maintenance

#### Key Specification

- 5/15kV Gear
  - 600/1200A, Up to 40kA/3s
- Type
  - Upright Type(Left/Right) - Inverted Type(Left/Right)
  - Manual & Power Operation
- NEMA Type 1 (Indoor) • NEMA Type 3R (Outdoor)
- UL Listed, IEEE C37.20.3, ANSI C35.57, CSA C22.2 No. 193:M83

### Secondary Unit Substation



Maximize customer satisfaction, minimize footprints with flexible design

#### Key Specification

- **Primary:** MV SWGR (Metal-Clad / Metal-Enclosed / Duplex switch etc.)
- **Transformer:** Oil, Dry, Cast Coil etc.
- **Secondary:** MV or LV SWGR (UL1558 SWGR, UL891 SWBD, etc.)

### Medium/Low Voltage Transformer



Maintenance Free, Minimizes Fire hazard (Cast Coil Transformer)

#### Key Specification

- **Pad-Mounted Transformer**
  - Up to 36kV / 10MVA - Mineral oil, Natural ester oil
  - Easy installation & transportation
  - ANSI, IEEE, NEMA certified
- **Cast Coil Transformer**
  - Up to 36kV / 25MVA - Al/Cu Coil, F(or H) Class
  - Low-noise and high-efficiency
  - IEC 60076-11, IEEE C57.12.01



## Low Voltage Switchgear



Perfect solutions for critical power, heavy industry, Battery plants applications.

### Key Specification

- **D Frame (800-1600A/4 High/W20")**  
- H-BUS 100kA, V-BUS 65kA
- **E Frame (800-3200A/4 High/W22")**  
- H-BUS 100kA, V-BUS 85kA
- **G Frame (3200-6000A/2 High/W43")**  
- H-BUS 100kA, V-BUS 100kA
- AR / Non-AR • NEMA Type 1
- Type 2B accessibility
- UL1558, ANSI C37.20.1/37.51/37.20.7

\*H-BUS: Horizontal Busbar \*V-BUS: Vertical Busbar

## Low Voltage Switchboard



Ideal for use in various industrial, commercial, and green energy applications

### Key Specification

- **LSB1-i\* (Front & Rear access)**  
- Up to 480V, 100kA, 4000A  
- W26"(C/D-Frame), W30"/36"(E-Frame) W44"(G-Frame)
- **LSB1-G\* (Front & Rear access)**  
- Up to 480V, 100kA, 4000A - W28"/36"/42"/46"/50"
- **LSB2-i\* (Rear access)**  
- Up to 480V, 100kA, 6000A  
- W32"(D/E-Frame), W44"(G-Frame)
- **LSB2-G\* (Front & Rear access)**  
- Up to 480V, 100kA, 6000A - W28"/36"/42"/46"/50"
- Non-AR only • NEMA Type 1 • UL 891

\*LSB: LSE Switch Board Series  
\*i: individually mounted \*G: Group mounted

## Low Voltage Panelboard



Easy-to-install panelboard solution for a variety of commercial and industrial applications

### Key Specification

- **LPB-1\* (Rail type)**  
- Up to 480V, ~250A  
- Up to 100kA@240V, 65kA@480V - W24"
- **LPB-2\* (Rail type)**  
- Up to 480V, ~600A  
- Up to 100kA@240/480V - W33"
- **LPB-3\* (Bolt-on type)**  
- Up to 480V, ~1200A  
- Up to 100kA@240/480V - W28"/36"/40"
- NEMA Type 1 • UL 67 Standards

\*LPB: LSE Panel Board Series

## Protection/ Monitoring Devices



Next generation intelligent device

### Key Specification

- **XGIPAM**  
- Applicable for Bay, Feeder, Transformer, Motor, Distributed generation  
- Analysis for sag, swell, up to 63th harmonics  
- UL Listed (UL508, UL1053)
- **GIMAC1000**  
- Compact & multi-functional monitoring device  
- DI 2points, High precision measurement  
- UL Listed

## Energy Storage System



All-in-ONE Power ESS

### Key Specification

- Compact & stand-alone
- Enables right-sizing of inverter systems
- 1hour rating/ 20ft
- Manufactured in U.S.A (LS Energy Solutions)



Modular String Platform

### Key Specification

- 480/600/690V
- Standard 19" rack
- Parallel up to 16 units
- Enhanced longevity and efficiency with a master-controller
- UL1741-SA incl. CA Rule 21

### Susol LIS

High performance and durability



#### Key Specification

- High performance such as STC, Load-switching, Fault-making, mechanical endurance etc.
- Diverse operation type and accessories
- Easy replacement of Load Interrupter Switch & Fuse
- General Specification
  - 4.76/15kV 40/64kA 600/1200A: STC 40kA/3s, Fault-making(asymmetrical) 64kA
  - IEEE C37.20.4, ANSI C37.58, CSA C22.2 No. 193:M83
  - UL/CSA Certified

### Susol VCB

Maximized durability and reliability



#### Key Specification

- 7" Narrow design for compact panel (~15kV/50kA)
- Complete accessory offering(Auto con., remote racking)
- Front maintenance possible by applying ring CT
- High performance such as STC, mechanical endurance, Corona etc.
- General Specification
  - 4.76/15kV, 25/31.5/40/50kA, 1200, 2000, 3000A, 4000A
  - 27kV, 25/31.5/40kA, 1200, 2000, 2500, 2750A
  - 38kV, 31.5/40kA, 1200, 2000A
  - UL Listed / IEEE Std C37.09 / ANSI C37.54

### Susol ACB

Optimized for compact panel size



#### Key Specification

- Compact size & high breaking capacity
- Multi-functional digital trip relays(N,A,P,S types)
  - L/S/I/G Protection, ERMS for safety maintenance
- N phase current conducting capacity: 100%
- General Specification
  - 3 Frame sizes: 1600/3200/6000AF
  - Rated maximum voltage: 254/508/635V
  - Breaking capacity: 85/100/130kA (at 508Vac)
  - UL Listed(UL1066) / ANSI / cUL

### Susol MCCB

Engineered for optimal protection



#### Key Specification

- High breaking capacity
- Reverse feeding with its standard performance
- Wide range of accessories incl. flange handles
- Various trip unit: ATU, FMU, FTU, ETS, ETM, OCR
- General Specification
  - 6 Frame sizes: 100/150/250/400/600/800/1200AF
  - Ampere Range: 15 ~ 1200A
  - 100kA@480VAC / 50kA@600V
  - UL Listed(UL489 & 489DC and 508) / IEC60947-2

### Circuit Breakers for high Voltage

For Renewable Energy System



#### Key Specification

- **UL ACB(UAW Series)**
  - Up to 847Vac
  - Up to 3200A(E-Fr), 85kA@847Vac
  - UL Listed(UL 1066)
- **UL MCCB(UTV Series)**
  - Up to 1000Vac
  - Up to 250A, 30kA@1000Vac, 50kA@800Vac
  - UL/IEC Dual Rating(UL 489/IEC 60947-2,3)

## Metasol Contactor & Relay

Compact size & High durability



### Key Specification

- Wide ampere range up to 2650A
- Easy installation with 4-terminals coil type and interlock unit which built-in 2NC aux contacts
- Various accessories for applications (AC-6b duty)
- Ready for IE3
- General Specification
  - Ie: 6 ~ 2650A, Uimp = 8kV, Ui = Ue = 1,000V
  - Up to 900kW at 440V in category AC-3
  - UL Listed(UL508)/cUL/IEC60947-1,4-1,5-1

## Metasol MMS(MPCB)

Safer through improved short circuit performance



### Key Specification

- Multi protective function(phase-failure, short circuit, overload) in one product
- UL 508 Combination Motor Controller SCCR(Type E)
- Trip indicating function/Test function available
- General Specification
  - 0.1 ~ 100A with 3 Frame size
  - Ui = 690V, Magnetic release 13 Ie max.
  - Up to 45kW at 400V in category AC-3
  - UL Listed (UL508) / cUL / IEC60947-1,2,4

## EMPR

Smart protection & safe control



### Key Specification

- High accuracy for failure protection
- Installed at the World 4th airport (Incheon)
- A variety of standard types for suitable solution
- Adjustable trip time (trip class 5, 10, 15, 20, 30)
- EMC tested according to EN
- General Specification
  - Overload, phase failure, unbalance, reverse phase
  - MODBUS, 4~20mA DC output(DMP/IMP/MMP)
  - UL Listed / cUL / IEC60947-1,4-1

## MCB

Ideal for circuit protection



### Key Specification

- Available for various applications which require either UL489 or UL1077
- Multi-function terminal: Screw, Lug
- AX, AL, SHT, UVT, Locking Device
- Rail mounting
- UL489 MCB (BK63HU)
  - 1/2/3 Poles, 1~63A, B/C/D/K Curves, 10kA
- UL1077 MCB (BK63H)
  - 1/2/3/4 Poles, 1~63A, B/C/D Curves, 10kA

## DC Components

For PV/ESS system application

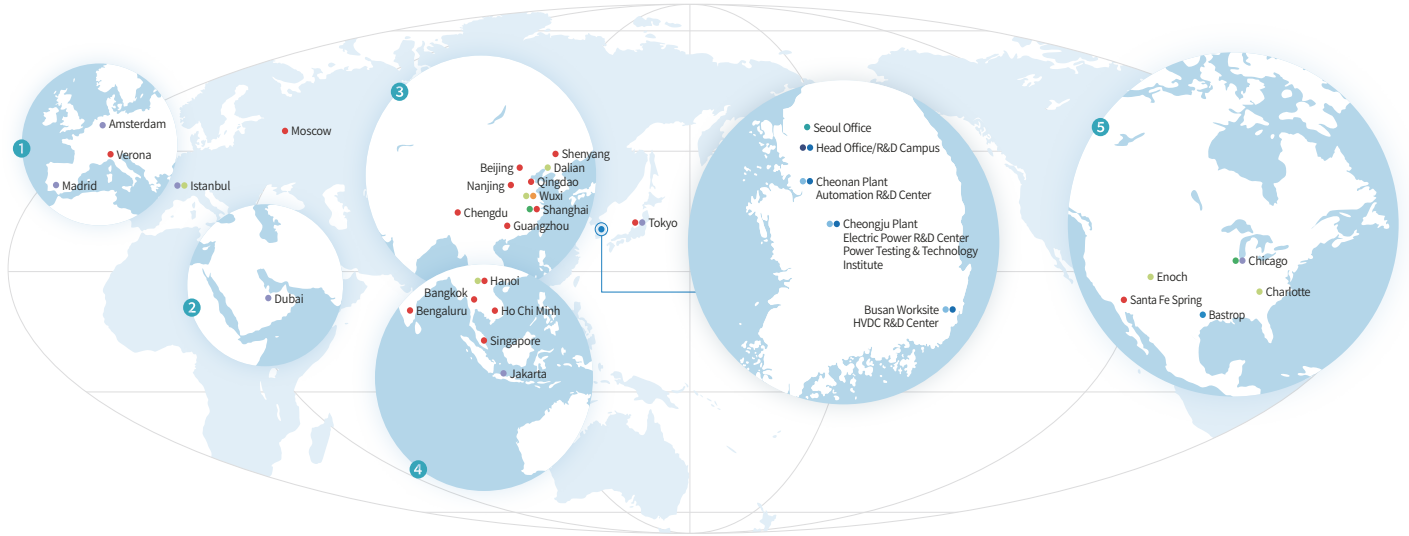


### Key Specification

- DC1500V DSU ACB (UDA Series)
  - Up to 4000A, 100kA (Compact: ~1200A, 50kA/1s)
  - UL Listed (UL489B & 489F)
- DC1500V MCCB (UTD Series)
  - Up to 550A, 65kA, 4 poles
  - UL Listed (UL489 & 489B)

- DC1500V Relay (GPR Series)
  - Up to 600A, Bi-directional structure applied
  - UL Listed (UL/IEC 60947-4-1)

# Global Business



LS ELECTRIC set a mid- to long-term vision for each overseas market to broaden its global business presence. In addition to pursuing the evolution of our existing businesses, we are discovering new business opportunities and strengthening the basis of business operations to take a tailor-made approach to each local market.

<p><b>1 Europe</b></p> <p>Accelerating growth mainly in the renewable energy market</p>	<p><b>2 Middle East &amp; Southwest Asia</b></p> <p>Strengthening direct sales through localization</p>	<p><b>3 China</b></p> <p>Strengthening business capabilities for power equipment and systems</p>
<p><b>4 Southeast Asia</b></p> <p>Focusing on the sale of strategic products and project development</p>	<p><b>5 North America</b></p> <p>Delivering global products and solutions, tapping into the Central and Latin American markets</p>	

## Domestic Subsidiaries (as of Dec. 31, 2022)

LS <sup>TM</sup> Metal	LS <sup>TM</sup> Mecapion	LS <sup>TM</sup> -Sauter	LS <sup>TM</sup> TFC	ACOT <sup>TM</sup> system
Manufacturing copper tubes and STS pipes Yongsan-gu, Seoul, Korea	Manufacturing industrial electronic equipment Dalseo-gu, Daegu, Korea	Selling BAS/IBS and GBS systems Anyang-si, Gyeonggi-do, Korea	Providing total IT services Yongsan-gu, Seoul, Korea	Manufacturing industrial communication equipment Anyang-si, Gyeonggi-do, Korea
<ul style="list-style-type: none"> <li>Head Office: Anyang</li> <li>Seoul Office: Yongsan</li> <li>Domestic Worksites: Cheongju, Cheonan, Busan</li> <li>Domestic R&amp;D Centers: R&amp;D Campus (Anyang), Electric Power R&amp;D Center (Cheongju), Power Testing &amp; Technology Institute (Cheongju), Automation R&amp;D Center (Cheonan), HVDC R&amp;D Center (Busan)</li> <li>Overseas Holding Company: Shanghai (China), Chicago (US)</li> <li>Overseas Production Subsidiaries: Wuxi (China), Dalian (China), Hanoi (Vietnam), Charlotte (US), Enoch (US), Istanbul (Turkey)</li> </ul>	<ul style="list-style-type: none"> <li>Overseas Sales Subsidiaries: Amsterdam (Netherlands), Dubai (UAE), Tokyo (Japan), Chicago (US), Istanbul (Turkey), Jakarta (Indonesia), Madrid (Spain)</li> <li>Overseas Branches: Shanghai (China), Beijing (China), Guangzhou (China), Qingdao (China), Nanjing (China), Chengdu (China), Shenyang (China), Tokyo (Japan), Hanoi (Vietnam), Ho Chi Minh (Vietnam), Moscow (Russia), Bangkok (Thailand), Santa Fe Springs (US), Singapore (Singapore), Bengaluru (India), Verona (Italy), Bastrop Campus (US)</li> <li>Overseas R&amp;D Center: Wuxi (China)</li> </ul>			

## FUTURING SMART ENERGY



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### Technical Question or After-sales Service

Customer Center-Quick Responsive Service, Excellent technical support | **800-891-2941**