

Derwent  
Top 100  
Global  
Innovator  
2020

# Electric power & Automation solutions



**LS** *ELECTRIC*



# History of LS...



## LS ELECTRIC is now the industrial and energy area of the LS Group



### Smart Power Solution

We are offering power devices, systems, and solutions required for transmitting and supplying to customers electricity produced from generators.



### Smart Automation Solution

LS ELECTRIC offers various automation solutions from machine to process control in order to effectively operate industrial sites.



### Smart Railway Solution

LS ELECTRIC is offering total Railway solutions related to manufacturing, installation, testing and maintenance for safer and more efficient operation





- **LS ELECTRIC**
- LS Cable&System
- LS-Nikko Copper
- Gaon Cable
- E1
- Yesco

## CLOSER THAN YOU IMAGINE

Where there is light to brighten the planet and energy to move the world, from homes and offices to factories and airports, LS is there.

More ubiquitous than you think, LS always stands by you.

## MORE ADVANCED THAN YOU IMAGINE

LS has the power to move industries.

Reading global trends one step ahead of the rest, LS ensures to increase each customer's competitiveness, while guiding their business into a bright new future.

LS is leading advanced infrastructure beyond anything you imagine.



## MORE INNOVATIVE THAN YOU IMAGINE



We are leading the way towards a new future through innovations that exceed our customers' expectations.



We are creating an efficient convenient future through ICT convergence and the integration of sophisticated technologies.



We are creating an abundant future by delivering safe clean energy.

We are creating a greener environment to free ourselves from environmental pollution and energy shortage. It may not be easy, but if you look at it closely the world best eco-friendly green technology is right beside us.

Our cutting edge technology contributes to an eco-friendly green world.

# Product Overview

## Electric Power Solutions

### Metasol MS

#### Contactors, Overload Relays & Starters

A contactor is used to switch current to an electric motor or other high-power load. Large electric motors can be protected from overcurrent damage through the use of Overload Relays.



#### Features

##### Easy connection

- Din Rail connection without any special tools
- Direct connection with a surge unit

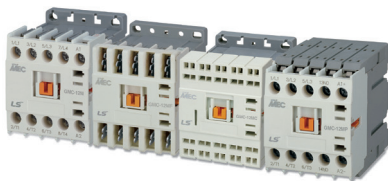
##### Simple wiring

- Mounting unit, Adapter
- Reversing wire set

##### Easy Maintenance

- 4-terminal type: Coil terminals on both sides
- Module type of Screw terminal
- Interlock unit with built-in auxiliary contacts (2NC built-in)
- Rated current: 6 ~ 2100A with 10 Frame size
- Up to 500kW at 440V in category AC-3
- $U_{imp} = 8kV$ ,  $U_i = 1,000V$
- Combination with Manual motor starters
- Various accessories
- UL, cUL, IEC and most other international standards

### Meta-MEC mini-MS



#### Features

- Rating: 6 ~ 12A
- Compact size (1 Frame size)
- Various connections
  - Screw clamps, Fast-on, Cage clamps, Solder pins
- Accessories
  - Auxiliaries: Side & Front mount
  - Surge absorber unit
  - Electronic timer
- International standard
- UL, cUL, IEC and most other international standards

### EMPR



#### Features

- Reduction of panel space
- EMC tested according to EN
- Adjustable trip time (trip class 5, 10, 15, 20, 30)
- Inverse time or definite time characteristics are available
- Various functions for protection against
  - Overload, phase failure, unbalance, reverse phase
- Wide adjustable range
- Manual reset as standard
- UL, cUL, IEC certified

### MMS



#### Features

- Rated current: 0.1 ~ 100A with 3 Frame size
- Up to 45kW at 400V in category AC-3
- $U_{imp} = 6kV$ ,  $U_i = 690V$
- Combination with Susol/Metasol MC
- Various accessories
- UL, cUL, IEC and most other international standards

### MCB



#### Features

- Protection: Short circuit & Overload (AC & DC)
- Rated current: 1~63A
- 1, 2, 3, 4 Poles
- Multi-function terminal: Screw, Lug & Ring tongue
- Rated breaking capacity: 6~10kA at 120/277/240/480V
- Rail mounting
- UL489 & 489DC, UL486E(Lug), UL1077, IEC 60898, IEC 60947-2, IEC 61008, IEC 61009



## Electric Power Solutions

### Susol UL MCCB

The new series Susol with thermal-magnetic or electronic circuit breakers are designed to protect low voltage electrical systems from damage caused by overloads and short circuits.



#### Features

##### For Power Distribution

- High breaking capacity
- Powerful engineering tools
- Optimum coordination techniques
- Reverse feeding

##### For Protection of Motors and Their Control Devices

- Optimal overload protection
- Guaranteed Short Circuit Current Ratings

##### For Extensive Applications

- Wide range of optimized auxiliaries and accessories
- Rated current: Up to 1200A 2, 3pole(UTE & UTS Series)
  - AF: 100, 150, 250, 400, 600, 800, 1200AF
  - Ampere Range: 15 ~ 1200A
- High breaking capacity: 100kA at 480VAC/50kA at 600V
- Various Trip Unit: ATU, FMU, FTU, MCS, MCP
- Variable Accessories
  - Electrical auxiliaries[AX, AL, UVT, SHT]
  - Extended handle, Flange handle, Locking devices
- UL (489 & 489DC and 508), IEC standards

### Susol UL ACB

Susol ACB provides you with total solutions with an advanced trip relay for measurement, diagnosis, analysis, and communication as well as protective functions for absolute protective coordination and electric power monitoring system.



#### Features

**Up to 6000A, 4 pole Susol ACB provides 3 frames.**  
**With its compact footprint in each frame size, it is designed to optimize panel space.**

- High breaking capacity: 85/100/130kA (at 508Vac)
- 3 ampere frame sizes: 1600/3200/6000AF
- N phase current conducting capacity: 100%
- Multi-functional digital trip relays
  - N/A/P/S type solid state trip relay
  - L/S/I/G Protection
  - ZSI(Protective coordination)
  - ERMS for safety maintenance
- Various accessories (53 types)
- Compact size & high breaking capacity
- Complete full line-up
- UL Listed / ANSI / UL 1066 / cUL

### Susol UL VCB

Vacuum Circuit Breaker, VCB are installed in the medium voltage distribution lines to protect the life and load of equipment. In case of failures, such as over current, short circuit and ground fault current, the VCB works by interrupting the circuit through the inner Vacuum Interrupter, which is activated by a signal from a remote relay.



#### Features

##### Main circuit structure with high reliability.

- Maximizing the durability and reliability of the main circuit contactors (Stego Tulip contactor).
- Strong structure for the temperature rise (Natural cooling system).

##### Convenience of switchgear configuration and a variety of accessories.

- Rated voltage: 4.76/15/27/38kV
- Rated current: 1200, 2000, 3000A
- Rated short-circuit breaking current: Up to 50kA
- CB Compartment available (Box type cradle)
- Various accessories(18 types)
- Compact size & high breaking capacity
- Complete full line-up
- IEEE Std C37.09, IEEE Std C37.20.2, ANSI C37.54, ANSI C37.55
- UL Listed & CSA (UVL-05/15/27)



## Automation Solutions

### M100

#### **Micro Drive (1 phase input)**

effective, compact drive meeting the new UL Standard (UL61800-5-1). Advanced features include quick parameter setting menu, built-in C2 class EMC filter and Built-in potentiometer.



#### **Features**

**1 phase 230V / 0.2~3HP (0.1~2.2kW)**

\* 115V 0.3/0.5/1HP available in 4rd qtr of '20.

- Meets UL61800-5-1
- Modbus RTU, RS485 Comm. Standard
- Built-in EMC Filter (C2 Class)
- Built-in Potentiometer
- Din-rail Mountable
- Side by Side Installation
- Quick Parameter Setting Menu
- Remote Keypad Available

### G100

#### **Micro Drive (3 phase input)**

Easy to use, cost effective drive with the new UL Standard (UL61800-5-1).

Advanced features include dual rating support, enhanced sensorless vector control, dual Ethernet IP option card and built-in C3 class EMC filter.



#### **Features**

**3 phase 230V / 0.5~10HP (0.4~7.5kW)**

**3 phase 480V / 0.5~10HP (0.4~7.5kW)**

- Meets UL61800-5-1
- UL Single phase rating (with derating)
- Modbus RTU, RS485 Comm. standard
- Built-in EMC Filter (C3 Class)
- Built-in Potentiometer
- Din-rail Mountable
- Side by Side Installation
- NEMA1 with Conduit option
- Enhanced Sensorless Vector Control
- Compliance with Field Networks option
  - Dual Ethernet IP, Profibus-DP

### S100

#### **Standard Industrial Drive**

Compact industrial drive with V/F and sensorless vector control. Advanced features including power loss ride through, PID control, Safe Off Relay, various communication options.

Dual rated for CT and VT.

NEMA4X model also available!



#### **Features**

**[Standard Enclosure]**

**1 phase 230V / 0.5~3HP (0.4~2.2kW)**

**3 phase 230V / 0.5~20HP (0.4~15kW)**

**3 phase 480V / 0.5~100HP (0.4~75kW)**

**[NEMA4X Enclosure]**

**3 phase 230V / 0.5~20HP (0.4~15kW)**

**3 phase 480V / 0.5~30HP (0.4~22kW)**

- 1 phase UL Rating for 230V & 480V
- Built-in EMC Filter (Option for 480V)
- Built-in Safety Torque Off
- Side by Side Installation
- Heatsink out the Back (Flange Option)
- PM Motor Control
- Compliance with Field Networks
  - Ethernet IP, Modbus TCP/IP, Profinet, EtherCAT, Profibus-DP, CANopen



## Automation Solutions

### H100

#### HVAC / Fan & Pump Drive

Combining air and water into a single VFD. The H100 satisfies two markets with one drive. Some features included are damper control, broken pipe, fire mode, and a payback counter. LCD keypad HOA standard on all H100s.



#### Features

- 3 phase 230V / 1~25HP (0.75~18.5kW)
- 3 phase 480V / 1~800HP (0.75~500kW)
- UL Single phase rating (with derating)
- UL Plenum Rated
- Built-in EMC Filter (for 480V)
- BACnet, Modbus-RTU, Metasys N2 Comm. standard
- LonWorks available as an option (Ethernet IP/Modbus TCP available in Sep of '20)
- Side by Side Installation
- Heatsink out the Back (Flange Option)
- NEMA1 with conduit option (~800hp)
- LCD Keypad designed for HVAC / Fan & Pump Applications
- Specialized function for HVAC & Pump
- Scheduling function (Real Time Clock)
- Energy Saving Display (Payback Counter)

### SP100

#### The Bypass Solution for HVAC

HVAC applications can be optimized with the user friendly H100 Bypass. This new Bypass from LS offers security with no downtime and energy savings using the advanced H100 series VFD.



#### Features

- 3 phase 230V / 7.5~25HP (5.5~18.5kW)
- 3 phase 480V / 7.5~75HP (5.5~55kW)
- 3 Contactor Bypass
- Meets 100KAIC SCCR Rating
- HAND/OFF/AUTO Bypass Switch
- Built-in DC Reactor (Built-in AC Reactor also available up to 40hp)
- UL Plenum Rated • NEMA1 Enclosure
- BACnet, Modbus-RTU, Metasys N2 Communication Protocol as standard
- Compact Size
- Easy Wiring and Installation
- Auto Bypass Function
- Motor OL Trip Detection • Easy Maintenance
- KEB, Kinetic Energy Buffering
- Fire Mode • Built-in Five Relay Outputs
- Real Time Clock

### iS7

#### Advanced Standard Drive

The iS7 is the most powerful and advanced drive in the line up. Motor control types include V/F, sensorless vector, and vector control. Three option module slots with PLC, synchronous, communication options. Used in oil & gas pump jacks, crane, wind & unwind applications.

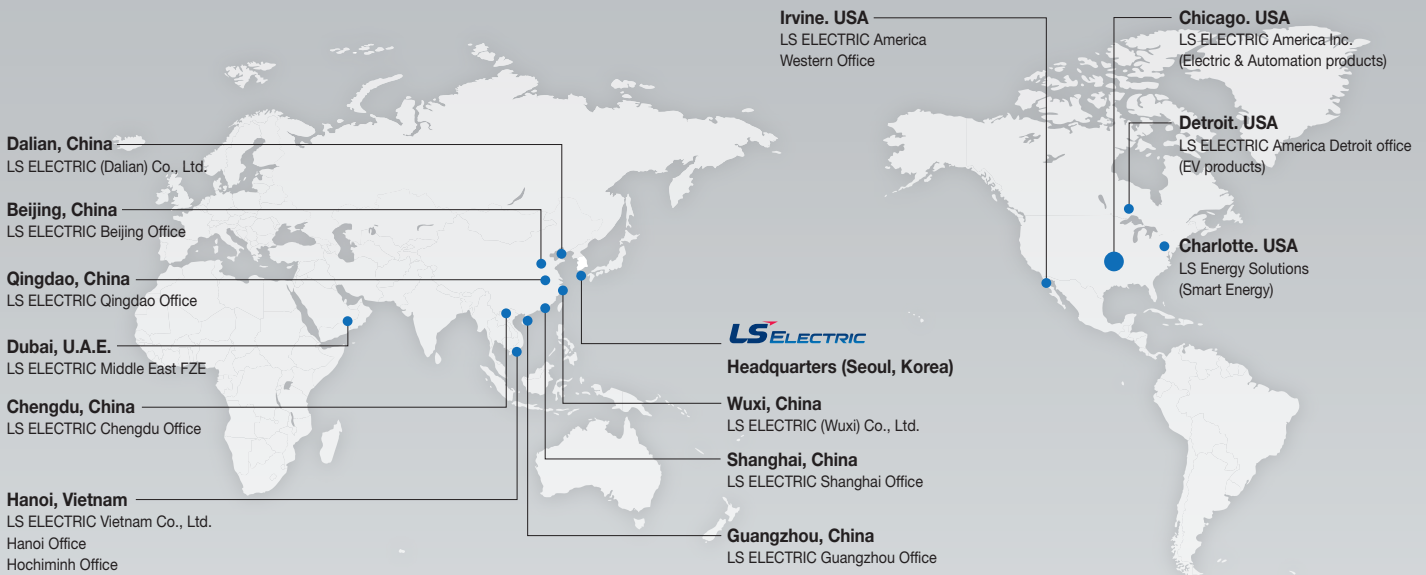


#### Features

- [Standard Enclosure]
- 3 Phase 230V / 1~100HP (0.75~75kW)
- 3 Phase 480V / 1~600HP (0.75~375kW)
- [NEMA12 Enclosure]
- 3 Phase 230V / 1~30HP (0.75~22kW)
- 3 Phase 480V / 1~30HP (0.75~22kW)
- UL Single phase rating (with derating)
- Built-in EMC Filter (230V & 480V: ~30hp)
- Built-in DC Reactor (230V: ~30hp, 480V: ~350hp)
- Heatsink out the Back (Flange Option)
- Standard Modbus-RTU communication with various communication available as option (Dual Ethernet IP, Modbus TCP, Profibus DP, Profinet, CANopen, LonWorks)
- User Friendly Option Cards
  - PLC card, Extension I/O 1&2, Synchronous, Position Control, Encoder, 24V Encoder, Binary, Auxiliary Power



## Global Network



**FUTURING SMART ENERGY**



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### Technical Question or After-sales Service

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