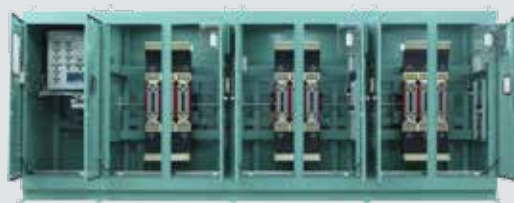


**MERSEN**  
*Expertise, our source of energy*

HIGH POWER  
SWITCHING,  
PROTECTION,  
AND CONTROL  
PRODUCTS

EXPERTLY ENGINEERED  
FOR RELIABLE PERFORMANCE



# MERSEN'S HIGH POWER SWITCHES ARE ENGINEERED TO MEET YOUR NEEDS

High Power Switches are necessary and critical to your operation. Not only do they help protect your people from injury, they help protect your equipment and processes, and minimize the risk of costly downtime and repairs.

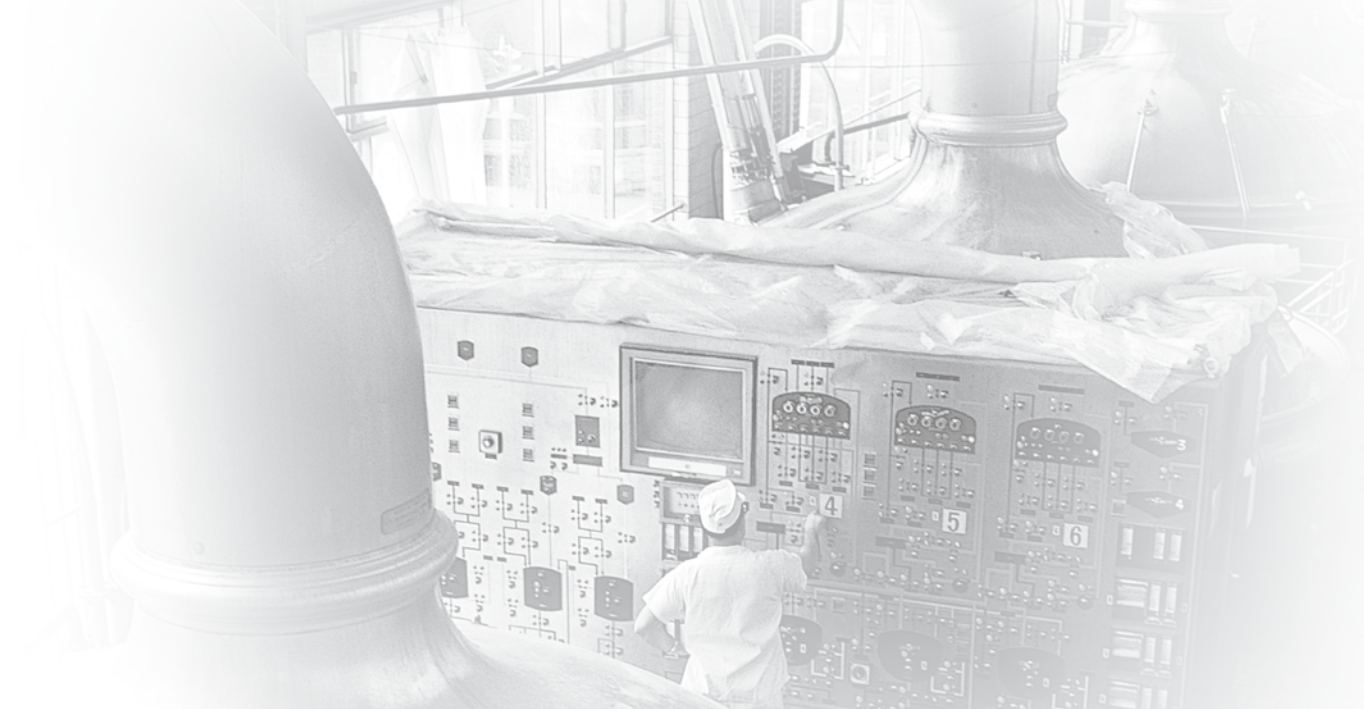
For more than **100 years**, Mersen has provided the market with safe, reliable and longer life on-load switches and off-load disconnectors. These devices offer high performance, robust operation for heavy duty requirements with very limited maintenance.

Mersen offers one of the largest product ranges and is the **worldwide leader in the market**. Mersen has the switch solution that will meet your unique needs.

Our standard High Power Switches are rigorously engineered to meet your technical specifications. Mersen's High Power Switches encompass different ranges of proven technologies (Flohe-Fouilleret, Soule, Berg, Hundt & Weber, and Lenoir Elec) that gives us **worldwide recognized expertise in Switching and Disconnecting**. This expertise includes a wide range of DC and AC switches and disconnectors designed to handle high current and medium voltage applications. Our offerings include rectifier output switches, disconnect switches in both AC and DC, transfer switches for AC and DC, cell switches and medium voltages AC switches, and AC earthing switches.

Innovative High Power Switch systems and assemblies are custom made. When you need more than just a switch, Mersen's world-class engineering team is ready to provide custom engineering and fabrication to build the High Power Switch system or assembly you need, exactly the way you need it. Mersen's team of design engineers are bold problem-solvers who enjoy meeting your High Power Switch challenges head on with innovative engineering and creative solutions. Our engineers incorporate design and construction features that ensure each switch performs reliably, whether it's a rectifier output switch operated once a year or a change-over switch system in an enclosed panel actuated dozens of times a day.

So whether your High Power Switch needs are simple or complex, you can rely on Mersen to deliver the best solution. We'll show you all the ways we're your safest connection for electrical protection.



# DC POWER CONVERSION: HEAVY DUTY DISCONNECT SWITCHES FOR RECTIFIER OUTPUT ISOLATION AND CHANGEOVER

## Heavy duty disconnect switches for rectifier output isolation and changeover

A leader in this market, Mersen is supplying technologies (Flohe-Fouilleret, Soule, Berg, Hundt & Weber, and Lenoir Elec) that are proven and recognized worldwide.

Our line of switches provides superior performance in the demanding and heavy duty environments at the output of rectifiers, for electrolytic cell applications, for metals refining, plating, specialty metal melting furnaces (aluminum, chlorine, copper, zinc, plating), and graphite applications.

Premium enclosures and encapsulated contact technology protects switches in aggressive or dirty environments.

### Features and Benefits:

- Self-supporting and deformable switches can be welded or bolted directly to bus systems without additional support
- Long mechanical and electrical contact life, with up to 20,000 operations
- Robust, highly conductive, mechanically independent, silver plated contact arms provide low watts loss, low temperature rise, and high SCCR
- Visual break or encapsulated contacts depending on model type and application
- Many accessories available, including auxiliary contacts, blocking magnets, and operations counter



Motor Operated NOR-D Switch with Bus Connection, 128kA

- Switches can be customized and built into highly engineered enclosures with control and indication interfaces



Motor Operated PBD Switch Installed Between Bus Systems, 120kA



### Core Product Range and Options:

- PBD Range of Switches, 14kA to 160kA, rated 2000VDC, single pole
  - Available with deformable or non-deformable contacts
  - Special options can be added to allow the switch to carry up to 200kA
- NOR Range of switches carries up to 140kA, 1500VDC, single or double pole, disconnect or changeover
  - Load breaking capability up to 100A at 100V with accessory
  - Available with non-deformable or deformable contacts with no need for flexible bus work
  - Flexible installation options, including horizontal or vertical axis mounting, customizable connection plates; Dimensionally fit to suit and fitted with bolt-on or welded connection to copper or aluminum bus bar or cable
  - Motor, manual, or pneumatic operation
- HSE Range of switches carries up to 60kA, 1500VDC, single pole
  - Encapsulated contacts for harsh environments
  - Motor, manual, or pneumatic operation

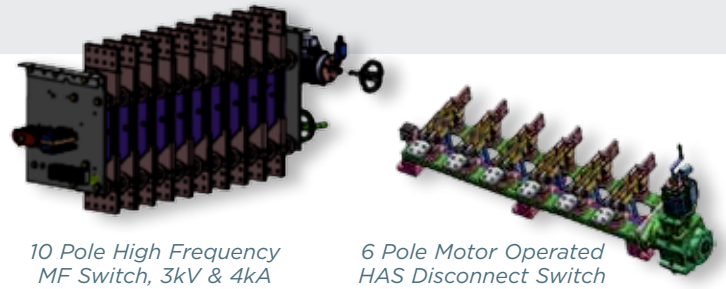
# POWER CONVERSION: AC RECTIFIER INPUT AND DC POWER CONTACTORS

## AC Power Conversion

Mersen offers a solution for high frequency converters for motors and induction arc furnaces used in metal production. Depending on the application, Mersen can package technology that is suitable to withstand high frequencies, multiple pole applications, and a wide range of customization.

### Features and Benefits:

- Long mechanical and electrical contact life, with up to 60,000 operations
- Robust, highly conductive, silver plated contact arms provide low watts loss, low temperature rise, and high SCCR
- Contacts provide visual open point
- Many accessories available, including auxiliary contacts, blocking magnets, and operations counter
- Switches can be customized and built into highly engineered enclosures with control and indication interfaces



10 Pole High Frequency  
MF Switch, 3kV & 4kA

6 Pole Motor Operated  
HAS Disconnect Switch

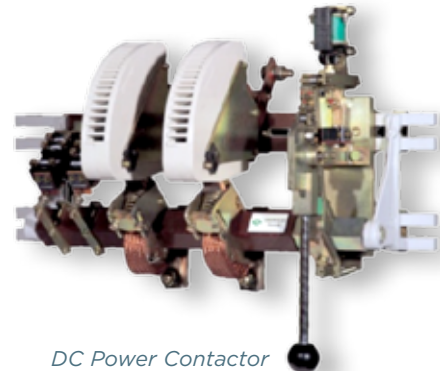
### Core Product Range and Options:

- MF Range of Switches carries up to 6kA, rated 3000VAC, up to 3kHz, up to 12 poles, change-over or disconnect
  - Available with deformable or non-deformable contacts
- HAS Range of switches carries up to 12kA, up to 36kVAC, up to 175Hz, flexible pole configurations

## DC Power Contactors by Lenoir Elec



CB Contactor



DC Power Contactor

### Features and Benefits:

- Contactors can be customized and built into highly engineered enclosures with control and indication interfaces
- Long mechanical and electrical contact life- up to 3 million operations
- High performance making or breaking capacities, utilizing magnetic arc blowout to interrupt current in regardless of polarity

### Core Product Range and Options:

- CEX or CB contactors, up to 6200A, application voltage up to 3kV, and up to 6 main poles
  - Up to 6 auxiliary contact sets
  - Flexible operation with AC or DC controls, mechanical latching with single or double electrical release
  - Multipole operation, with locking features

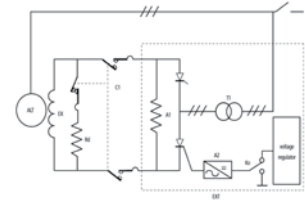
# POWER GENERATION: MEDIUM VOLTAGE, HIGH CURRENT AC SWITCHES FOR GENERATOR OUTPUT ISOLATION/GROUNDING AND DC CONTACTORS FOR FIELD EXCITATION

## Power Generation: DC Excitation Control Circuits

Mersen's Lenoir Elec CEX contactors provide a complete solution for switching excitation circuits for motors and generators.



Mersen Excitation Switching System with CEX Contactors



Generator Excitation System

### Features and Benefits:

- Mersen provides a complete solution for excitation system switching
- Mersen provides highly engineered and customizable connections, enclosures and control/indication interfaces for these contactors
- Long mechanical and electrical contact life—up to 3 million operations
- High performance making or breaking capacities, utilizing magnetic arc blowout to interrupt current in regardless of polarity

### Core Product Range and Options:

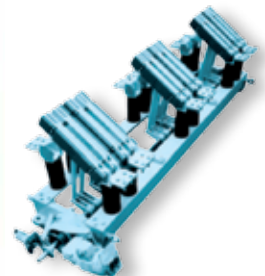
- CEX contactor systems, up to 6200A, application voltage up to 3kV, and up to 4 main poles, and 2 overlapping poles for discharge resistors
  - Up to 6 auxiliary contact sets and locking features
  - Flexible operation with AC or DC controls, mechanical latching with single or double electrical release

## Power Generation: AC Switches for Generator Output

For renewable and conventional power generation, Mersen offers a range of medium voltage switches for isolation, grounding, and maintenance of substation equipment. These switches and supports are engineered to carry high currents with high withstand currents and high basic impulse level (BIL).



3 Pole Motorized Disconnect Switch, 14.4kV at 13.6kV



3 Pole HAS Disconnect Switch, 8kA, 12kV

### Features and Benefits:

- Flexible installation and application: factory adaptable connection plates and corrosion resistant versions available
- Switches can be customized and built into highly engineered enclosures with control/indication interfaces
- Silver contacts provide long mechanical and electrical contact life, and low watts loss, important for enclosed applications

### Core Product Range and Options:

- HAS, HUVS, and ETM Range of switches carries up to 12kA, up to 36kVAC, up to 175Hz, flexible pole configuration (1-3 poles, standard)
  - Changeover and quick closing grounding options available with ETM and HUVS
  - Manual, motor, or pneumatic operation available, along with up to 6 auxiliary contact sets and locking features

# TRACTION: DISCONNECT SWITCHES AND CONTACTORS FOR ELECTRIC RAIL APPLICATIONS

## Traction Power Disconnect Switches and Contactors

Mersen has a long history within the electric rail industry, supplying high power switches, contactors, power transfer equipment, fuses and advanced materials. Utilizing technologies from Berg, Soule, and Lenoir Elec, Mersen supplies comprehensive solutions for DC rail power transfer and isolation. Solutions are available for at high currents, and application voltage up to 3000VDC. Switches are used at rectifier output, catenary and third rail isolation, DC changeover switches, and AC medium voltage disconnect switches at transformer input. Power protection and control cabinets are also available for custom and specific applications.

### Features and Benefits:

- Flexible installation and application: factory adaptable connection plates and corrosion resistant versions available
- Mersen provides highly engineered and customizable enclosures and control/indication interfaces
- Silver contacts provide long mechanical and electrical contact life, and low watts loss, which is important for enclosed applications
- Switches provide visible open point, and grounding provision for safety during maintenance
- FA Range of switches carries up to 8kA, up to 3kV, flexible pole configuration (1-10 poles)
- Lenoir Elec contactors carries up to 8kA, up to 1000VDC, up to 175Hz, flexible pole configuration (1-3 poles, standard)
  - Assembly of main poles in various numbers, with similar or different ratings, with or without mechanical overlapping, and with or without magnetic blowout
  - Multiple auxiliary contact configurations available, instant normally open or normally closed, with or without overlapping, with blowout (for DC control circuits) or without blowout, delayed on opening or on closing of contactor
  - Assembly of a mechanical latching with single or double electrical release, with or without tripping coil(s)

### Core Product Range and Options:

- HA/HAS Range of switches carries up to 3.75kA, up to 36kVAC, up to 175Hz, flexible pole configuration (1-3 poles, standard)
  - Changeover and quick closing grounding options available with ETM and HUVS
  - Manual, motor, or pneumatic operation available, along with up to 6 auxiliary contact sets and locking features



12 Circuit Fused Disconnect Switchboard, 1kV, 5kA

# SYSTEMS CAPABILITY: ENCLOSURES, CONTROLS, AND SPECIALTY PANELS TO FIT YOUR CRITICAL APPLICATIONS

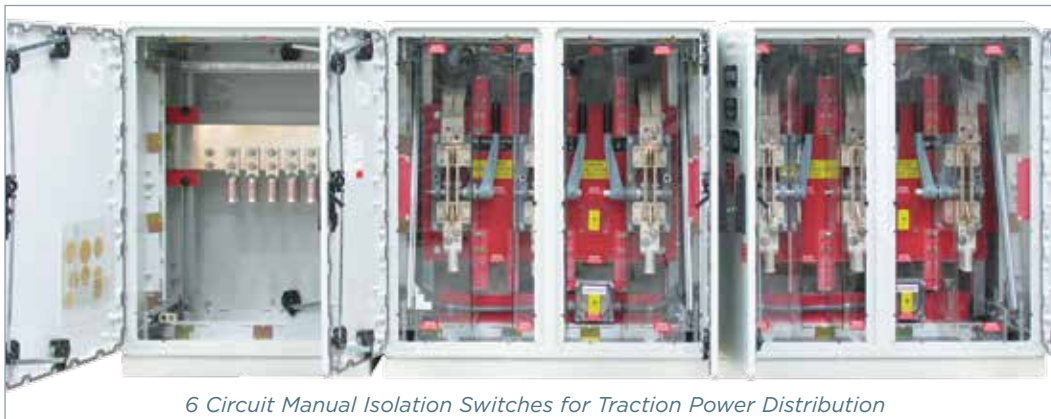
## Engineered Panels, Cabinets, and Controls

For any application, Mersen's engineering expertise, combined with its broad and unique product offering allows for it to create innovative solutions for your critical applications.

If you need a control panel for high power applications, Mersen can build it. Mersen's enclosed high power switches, fuses and equipment are high quality, standing up to the most harsh environments with a rigorous QA process to meet many demanding applications.

### Mersen's Engineering Expertise

- Thermal Requirements: Heat balance studies are conducted to ensure proper enclosure selection and modification for extreme hot or cold environments.
- Static and Mechanical Requirements: High SCCR equipment will ensure that equipment is mechanically sufficient to sustain the magnetic forces resulting from high fault currents. Structurally sound supports and enclosures to meet special requirements.
- Arc Flash Management: As an expert in fusing, Mersen can provide a complete protection and control solution in an enclosure suitable for any environment to meet your arc flash management criteria.
- Requirements for Corrosive, Harsh, or Dirty Environments: Panels and enclosures, metal or dielectric, are selected and modified to meet the needs of the environment and the need of the application.



## ABOUT MERSEN ELECTRICAL POWER

Mersen Electrical Power provides a comprehensive line of current-limiting fuses (low voltage, general purpose, medium voltage, semiconductor, miniature and glass, and special purpose) and accessories, fuse blocks and holders, power distribution blocks, low voltage disconnect switches, surge protective devices, high power switches, heat sinks, laminated bus bars, and more.



MEDIUM VOLTAGE FUSES



HIGH SPEED FUSES



LOW VOLTAGE UL FUSES



MERSEN IS A GLOBAL EXPERT  
IN ELECTRICAL POWER AND  
ADVANCED MATERIALS

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