TIP SHEET
HOW TO SELECT & SPECIFY HIGH POWER SWITCHES

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Mersen's high power switches are designed with two main goals in mind, protecting people who are using electrical equipment, and protecting the electrical equipment. Along with Safety, Mersen's high power switches are rigorously engineered to encompass a wide range of AC and DC applications. They are designed to handle high current / low voltage, and high voltage / High current applications.

So what is a high power switch?

- A safety device for humans and the equipment
- A simple component within the system
- A device which is transparent to the rest of the network
- A component which is reliable for the duration of its life

Brief History

In the past Mersen has offered only a limited selection of high power switches. During that period, our main focus was in the rectifier industry, however this has since changed. In the last 15 years Mersen has added four key contributors to the medium voltage and high power switch industry. They are formerly known as Soule, Berg, Hunt & Webber, and Lenoir Electric. Each new product line is focused in serving different areas of the medium voltage and high power switch industry. This has allowed us to expand our product line and in turn offer more solutions for customer applications.

Wherever there is HPSW needed, there is typically use for fuses or other means of circuit protection.

Areas we can serve the HPSW market:

SWITCH	APPLICATION
HA, HUVS	Battery disconnect
HA, HUVS, HAS	Grounding switch
HA, HUVS	Motor Isolation
HA, HUVS	3rd rail sectionalization (Transit Industry)
HUVS, HAS	Transfer Power between large furnaces (metal processing)
HUVS	Changeover Switch
HAS	Generator Isolation
HAS	Transformer Isolation
HAS	Tie Switch
HAS	medium voltage drive
NORD, PBD, HSE, HSD	Output Rectifier isolation
NORD, PBD, HSE, HSD	large power supply disconnect
HSE, HSD	Cell Isolation for electrolytic
CBC	Electrochemistry - galvanolasty (reversing polarities) electroplating
CBC	Lifting magnets and lifts
CBC	Hoisting equipment, such as cranes, and overhead cranes.
CBC	Motor Control, rolling mills accessories, «blooming mills» mining industry
CBC	Motor controls in foundry industry
CEX	Power generator excitation systems / Field Excitation Compactor

Selecting a Switch

When selecting a high power switch for an application please keep in mind that not all applications are straight forward, and can require certain customer specifications. This is why we treat each application as a custom build, and leave the door open for any unique design specifications. If a certain foot print

TS-HPS-002 | 09.17 | PDF | ©Mersen 2017

is needed, we can accommodate and build to meet these requirements. In some cases the customer may prefer to have a motorized option, allowing the switch to open and close remotely via. a motor control box, which we can provide. For some applications the customer may require other devices to operate based on the status of the switch, in which case we can provide auxiliary contacts which allow for coordination between other key components within the circuit.

For every switch selection there needs to be a starting point. Having a basic idea as to what the customer needs, will help in guiding us to the finished product. When inquiring about a high power switch, there are some core questions which help in the selection process. They are as follows:

What you need to know when specifying a switch

- Is this an indoor, or outdoor application?
- Do you need the switch to open and close under load?(If yes, then we may not have solution.)
- What is your system voltage rating, and is it AC or DC?
- BIL or Short Circuit Rating (SCCR)?
- Disconnect or Changeover?
- How may poles do you need?
- What is your current rating?
- What type of operation would you like, motor, manual, or pneumatic?
- Do you need any auxiliary contacts?
- Is the switch going into an enclosure, and if so we can provide the switch/enclosure package?

Having the answers to some of these questions can help us in selecting a switch for the customer. In most cases we can provide a basic outline drawing. Once the customer has specified a switch and has placed an order a complete 3D drawing is provided with all dimensions and details needed for design purposes.

Another key note to keep in mind is the fact that we can offer a complete package. If the customer is looking for an enclosed option, we can provide this. In some cases the switch may need to be installed within an enclosure due to outdoor operation, and harsh weather conditions.

So when asked if Mersen offers a high power switch, we can say yes. With some basic knowledge for the customers application we begin to steer ourselves towards a product family. Once a family has been determined, we can then pass this information onto the customer. It is then up to the customer to determine if the product we have selected is the right choice for their application, and if not changes can always be made.

Please note: a high power switch is classified as anything greater than 600V