

# Energy Storage Rack (ESR) Battery Protection Fuse

## Problem/Solution

The Littelfuse Energy Storage Rack (ESR) series of fuses is designed specifically to protect battery racks in energy storage systems, inverters, and many other dc applications. The 1500 V dc high-speed square body fuse is extremely fast-acting to respond quickly to a range of fault currents to safeguard the battery module or other devices.

This Class aBat partial range fuse has superior short circuit protection and a low minimum breaking capacity (MBC)—from 300 % or 3 times the fuse's rated current to 175 kA (250 kA self-certified)—to cover a range of over currents that traditional high-speed partial range fuses do not protect against.

## Technical Resources



Series Page



ESR Fuse  
Datasheet



Expertise Applied | Answers Delivered



## Features & Benefits

- High dc interrupting rating provides superior short-circuit protection and the ability to scale-up systems without the need to redesign the existing circuit protection, saving time and costs
- The low minimum breaking current offers easy coordination with battery modules and reduces size and rating of dc contactors to save space and costs
- Extremely fast acting delivers high-speed performance
- Low watt loss maximizes efficiency by preventing energy loss and minimizing the wasted power of components
- Conforming to the IEC60269-7 battery standard, the ESR series is specifically designed to safeguard evolving battery technologies with fuse circuit protection
- Compact NH 1XL size saves space and offers design flexibility

## Markets/Applications

- Battery energy storage systems (BESSs)
  - Battery Protection Unit (BPU) and battery racks
- Power conversion systems
- Dc common bus systems
- Hybrid PV-BESS inverters

R1906

Littelfuse, Inc. © 2022 1