Expertise, our source of energy

YOUR ELECTRICAL SYSTEM
IS YOUR LIFELINE

AMP-TRAP 2000® FUSES

IN SHORT, AMP-TRAP 2000 FUSES PROTECT YOUR ASSETS

A lifeline that can be cut by an arc flash can disintegrate. Conductors can vaporize. Bus bars can break. And components like switchgear, MCC buckets and motor starters can be destroyed, bringing your operation to a halt.

That incident can cost your business a million dollars - or more - in liability. Add to that the costs of dealing with injuries and equipment repair, and you're facing a real drain on your profitability.

YOU NEED THE CURRENT-LIMITING PROTECTION OF AMP-TRAP 2000 FUSES

Traditional fuses were designed to protect your electrical system from fire and explosion, and your people from the potential harm of an arc flash.

Mersen's Amp-Trap 2000 current-limiting fuses do more than that. Opening in less than one-quarter cycle at fault currents up to 300kA, Amp-Trap 2000 fuses minimize the let-thru current that flows downstream.

Not only do Amp-Trap 2000 fuses save you from arc flash liability, they minimize the downtime that can diminish your productivity and profits. In short, they protect all your assets.

SHORT CIRCUIT PROTECTION IS JUST THE BEGINNING

In addition to the current-limiting protection that safeguards your equipment, Amp-Trap 2000 fuses offer you:

- **Total system coverage.** The Amp-Trap 2000 family includes Class L, Class J, Class RK1 and Class CC fuses in a wide range of amperages. It's the only one you need to protect your complete low-voltage electrical system, from service entrance equipment to your smallest motors.
- **Reduced inventory.** Because one Amp-Trap 2000 fuse can replace multiple SKUs, you will reduce the number of fuses you use and stock — typically by up to 35%. That means decreased inventory and operating costs, and less time ordering and stocking.
- **Time-delay.** Amp-Trap 2000 fuses withstand high inrush currents from motors and transformers to eliminate nuisance opening. Time-delay also simplifies selection and permits the use of smaller amperage ratings, providing better protection in case of overloads.
- **Easy 2:1 selectivity.** When a fault occurs, a selective system ensures that the fuse closest to the fault opens without affecting fuses in upstream circuits, preventing nuisance shutdowns and "blackouts." With Amp-Trap 2000, selectivity is achieved between any two fuses in series (above 60 amps) when the ratio of upstream rating to downstream rating is 2-to-1 or greater (see table, page 5).
- **Improved safety.** High-energy arc flashes can create temperatures of 35,000°F and 1,500 pounds per square foot of force. Highly current-limiting Amp-Trap 2000 fuses protect personnel and equipment from these catastrophic effects. And their versatility and rejection-style design help to avoid hazardous misapplications.
- **Tomorrow's protection today.** Current-limiting protection is the wave of the future. By installing Amp-Trap 2000 fuses, you'll protect your equipment today and be ready for more stringent requirements tomorrow.

FIND OPEN FUSES FASTER, WITH SMARTSPOT®

WHENEVER YOU SEE ANY RED IN A SMARTSPOT INDICATOR, YOU KNOW THAT FUSE IS OPEN

Leave it to an innovative fuse company like Mersen to come up with a whole different kind of open-fuse indicator.

Patented SmartSpot is an obvious improvement in indicator fuses — one that helps you find the open fuse quickly and easily, and cut even more costly downtime.

WHAT MAKES SMARTSPOT SO SMART?

Our innovative SmartSpot, designed with advanced materials that work similar to the elements in a fuse, features a unique solid-body design that doesn't compromise the fuse's structural integrity or reliability. When a fuse opens, this material responds to the increased current and immediately turns the SmartSpot indicator from silver to eye-catching red.

And SmartSpot stays red, so you can quickly identify the open fuse with the power off. Just open the panel and scan. Wherever you see any red in a SmartSpot indicator, you know that fuse is open.

Look for SmartSpot on our most widely used Amp-Trap 2000® fuses — Class J and Class RK1, 8 amps and up.

QUALITY FUSES DESERVE QUALITY BLOCKS AND HOLDERS

You'll find the same quality and reliability of Mersen Amp-Trap 2000 fuses in our extensive line of fuse blocks and holders. Choose from traditional fuse blocks as well as space-saving configurations, and unique features like adder blocks that just snap on to form as many poles as needed.

For our Class J and Class CC fuses, you can also choose the IP20 protection of our popular UltraSafe™ IEC-style finger-safe fuse holders. Compact and modular, they offer flexibility in panel design, the simplicity of DIN-rail mounting, and safe, flick-of-the-finger changeouts.

INNOVATION AND SO MUCH MORE, FROM YOUR CIRCUIT PROTECTION RESOURCE

Amp-Trap 2000, SmartSpot and UltraSafe are just part of an unparalleled range of innovative solutions offered by Mersen.

Our vast product selection also includes semiconductor fuses, high- and low-power disconnect switches, and devices for surge protection and thermal management. And like our industrial fuses, they're all backed by our exceptional applications and technical support, and a distribution network that combines global experience and capabilities with local, customer-first service.

So whatever and wherever your circuit protection needs might be, there is one company that can meet them all.

The Amp-Trap 2000 fuse family encompasses a wide range of sizes and current ratings, so it's all you need to bring maximum protection to your electrical system.

Choose Amp-Trap 2000 Class L fuses for your service entrance. Compact Class J fuses (and their smaller, less costly fused switches) for new installations. Class RK1 fuses to upgrade your existing circuit protection. And Class CC fuses for your smallest motors and transformers.

In addition to their high current-limiting ability, Amp-Trap 2000 fuses feature:

- Time-delay, to handle inrush currents from motor
  starters and transformers without nuisance opening.
- Easy 2:1 selectivity that helps avoid nuisance shutdowns and blackouts.
- Long-lasting metal-embossed dates and catalog numbers for easy traceability and preventive maintenance.
- A fiberglass body that provides dimensional stability in harsh industrial environments.
- An instantly recognizable, bright orange label.

With Amp-Trap 2000 fuses, you'll be assured of the best protection — upstream and downstream.

CLASS L, A4BQ FUSES - SAFETY WHERE YOUR CIRCUIT STARTS

Safeguard your circuits at the point of power entry with the best possible protection — Amp-Trap 2000 A4BQ fuses. They provide a minimum time-delay of 4 seconds at 500% of their rated current to handle harmless inrush currents, plus they're 20% more current-limiting than any other Class L fuse. That means optimal overcurrent protection for service entrances, large motors, feeders and other circuits.

A4BQ ratings range from 601 to 6000 amperes, 600V AC, 300kA I.R., and an exclusive 500V DC, 100kA I.R., through 3000A.

Features

- Fastest operation under short circuit conditions
- Most current-limiting for lowest peak let-thru current
- Replaces all older Class L fuses
- Pure silver links for long fuse life
- AC and DC ratings
- High-grade silica filler for fast arc quenching

Applications

- Mains and feeders
- Large motors
- Lighting, heating and general loads
- Power circuit breaker backup
- UPS DC links, battery disconnects and other DC applications

Application notes

- Mains and feeders — Can size at 100% of expected full load, unless equipment manufacturers specify otherwise.
- Motor starters — Consult your motor control manufacturer's recommendations.
- Lighting, heating and general loads — Can size at 100% to 125%, depending on load make-up.
- Transformers — Due to the high inrush currents that can be experienced with transformers, size fuse to carry 12 times transformer full load for 0.1 second and 25 times full load for 0.01 second.

CLASS J, AJT FUSES - COMPACT FUSES, BIG PROTECTION

The most current-limiting UL-class fuse, Mersen's AJT provides optimal performance, prevents interchangeability with old fuses, and saves valuable panel space. So you can use smaller, more economical fuse blocks and IEC contactors to provide superior protection for dedicated or combined motor, lighting, heating and transformer loads.

Plus their time-delay characteristic allows for use in a wide range of applications. Rated from 1 to 600 amperes, 600V AC, 300kA I.R., and 500V DC, 100kA I.R., listed to UL 248-8, they're the right fuses for any new installation.

Features

- Most current-limiting UL-class fuses
- Timesaving SmartSpot indicator
- Unique dimensions prevent misapplications
- Optional mechanical indicator available on 70A to 600A

Applications

- Motor circuits
- Mains and feeders
- Branch circuits
- Lighting, heating and general loads
- Transformers and control panels
- Circuit breaker backup
- Bus duct
- Load centers

Application notes

- **Mains and feeders** — Can size at 125% of load for NEC and CEC code compliance.
- **Motor starters** — For typical starting duty and optimal coordination, fuse rating should not exceed 150% of motor FLA. Where "no-damage" tests have been conducted, follow the control gear manufacturer's fuse ampere rating recommendations.
- **Lighting, heating and general loads** — Can size at 125% of combined load for NEC and CEC code compliance.
- **Transformers** — Due to the high inrush currents that can be experienced with transformers, size fuse to carry 12 times transformer full load for 0.1 second and 25 times full load for 0.01 second.

EASY SYSTEM CODE COMPLIANCE

When a fault occurs, a selective system eliminates power outages and costly downtime in those parts of the system not directly affected by the fault, permitting compliance with NEC 620.62, 517.26, 700.27, and 701.18.

In a properly designed selective system, the required minimum melting energy of the main fuse must be greater than the total clearing energy required to open the branch fuse. Under fault conditions, the branch fuse will then open without damaging the main fuse.

Amp-Trap 2000 makes system selectivity simple. Just follow the ratios shown in the chart at right.

Amp-Trap 2000 Selectivity Chart

Branch Fuse	Main Fuse			
	A4BQ	AJT	A2D	A6D
A4BQ	2:1	-	-	-
AJT 50A & up	2:1	2:1	2:1	2:1
AJT 30A-45A	-	2.5:1	-	2:1
A2D-R 60A & up	2:1	2:1	2:1	-
A2D-R 30A-50A	-	3:1	2:1	-
A6D-R 65A & up	2:1	2:1	-	2:1
A6D-R 30A-60A	-	2:1	-	2:1

Amp-Trap 2000 makes fuse coordination easy. Selectivity is achieved between any two Amp-Trap 2000 fuses in series (above a 60A rating) where the ratio of the upstream fuse ampere rating to the downstream fuse ampere rating is 2-to-1 or greater.

CLASS RK1, A2D-R AND A6D-R FUSES - UPGRADE TO ADVANCED TECHNOLOGY

Significantly more current-limiting than Class RK5, K and H fuses, Mersen's A2D-R and A6D-R fuses are ideal for upgrading your existing feeder and branch circuits to arc flash category "0". They also offer plenty of application flexibility, with ratings from 1/10A to 600A (250V or 600V), 300kA I.R.

Features

- Highly current-limiting to achieve HRC "0"
- Timesaving SmartSpot indicator
- Brass end caps (blade style) for cooler operation and superior performance
- Rejection-style design

Applications

- Motors
- Safety switches
- Transformers
- Branch circuit protection
- Disconnects
- Control panels
- General-purpose circuits

Application notes

Mains and feeders — Can size at 125% of load for NEC and CEC code compliance.

Motor starters — For typical starting duty and optimal coordination, fuse rating should not exceed 150% of motor FLA. Where "no damage" tests have been conducted, follow the control gear manufacturer's fuse ampere rating recommendations.

Lighting, heating and general loads — Can size at 125% of combined load for NEC and CEC code compliance.

Transformers — Due to the high inrush currents that can be experienced with transformers, size fuse to carry 12 times transformer full load for 0.1 second and 25 times full load for 0.01 second.

CLASS CC, ATQR FUSES - OPTIMAL TRANSFORMER PROTECTION IN THE SMALLEST PACKAGE

ATQR Class CC fuses provide the time-delay needed to handle the high in-rush currents of control transformers, solenoids, and similar inductive loads. They're available in 1/10A to 30A, 600V 600VAC, 200kA I.R.

Features

- Highly current-limiting
- Rejection-style design
- Special time-delay characteristics for transformer loads
- Applications
- Control transformers
- Solenoids
- Inductive loads
- Branch circuit protection

Application notes

- Control transformers, solenoids and similar inductive loads — For control transformers 600V AC or less with ratings up to 2000VA. ATQR fuses are designed to handle 40 times the transformer's primary full load amperes for 0.01 second.

Lighting, heating and general loads — Can size at 125% of combined load for NEC and CEC code compliance.

CLASS CC, ATDR FUSES - THE BEST SMALL-MOTOR PROTECTION

Choose our highly current-limiting ATDR fuses when you need maximum fault protection for sensitive branch circuit components and small motors. They deliver the best time-delay characteristics and exceptional cycling ability for frequent motor starts and stops without nuisance opening. They're available in 1/4A to 30A, 600VAC, 200kA I.R.

Features

- Highly current-limiting
- Best time-delay characteristics in a Class CC fuse
- Exceptional cycling ability for frequent motor stops and starts
- Rejection-style design

Applications

- Small motors
- Contactors
- Branch circuit protection

Application notes

- Motor starters — For typical starting duty. Where "no damage" tests have been conducted, follow the control gear manufacturer's fuse ampere rating recommendations.
- Lighting, heating and general loads — Can size at 125% of combined load for NEC and CEC code compliance.

Mersen
Expertise, our source of energy

MERSEN IS A GLOBAL EXPERT IN ELECTRICAL POWER AND ADVANCED MATERIALS

NORTH AMERICA

USA
Mersen USA
374 Merrimac Street
Newburyport, MA 01950
T : +1 978 462 6662

CANADA
Mersen Canada
6200 Kestrel Road
Mississauga, ON L5T 1Z1
T : +1 416 252 9371

EUROPE

FRANCE
Mersen France SB S.A.S.
15 rue Jacques de Vaucanson
F-69720 Saint-Bonnet-de-Mure
T : +33 4 72 22 66 11

ASIA

CHINA
Mersen Shanghai
No.55-A6. Shu Shan Road
Songjiang 201611 Shanghai
T : +86 21 6760 2388

EP.MERSEN.COM

BR-AMPTRAP-003 | 1.19 | PDF |