

# Motor Protection

## Amp-Trap® and 9F60 Series

### 2.4kV, 2.54kV, 4.8kV, 5.08kV and 7.2kV Ferrule mounted fuses:

Mersen R-Rated fuses are current-limiting, high interrupting rating fuses intended for the short circuit protection of medium voltage motors and motor controllers. R-Rated fuses are back-up fuses that have a minimum interrupting rating, and must be coordinated with overload relays in combination motor starters. The motor starter manufacturer generally specifies the R-Rated fuse size. These fuses come with a 3 (size D) or 4 (size E) inch diameter barrels with ferrules and are mounted in spring reinforced clips.

### Features/Benefits:

- The Amp-Trap and 9F60 R-Rated fuses are UL Recognized.
- Ferrule mounting for standard clips and interchangeability with other brands of fuses.
- Current-limiting for superior equipment protection.
- Metal embossed catalog number and manufacturing date for lasting identification.
- Hookeye for non load-break isolation by hookstick
  - On the 4.8kV an optional hookeye mounted in the factory is available.
  - On all other 3" barrel if a hookeye is required, use the operating eye 9F61AAW612. (See page E58)
- Blown-fuse indicator to give positive identification of open fuse.
  - Amp trap: 3" Barrel 2 lb tripped force - 0.50 Inch
  - 9F60: 0.125 lb tripped force – 0.20 Inch

### Highlights:

- R-Rated
- UL recognized

### Applications:

- Short circuit protection of medium voltage motors and motor controllers.

### Definitions:

**R-Rating:** R-Rated fuses are back-up fuses that operate as follows (Per ANSI C37.46-2000): An R-Rated fuse will melt in the range of 15 to 35 seconds at a value of current equal to 100 times the "R" rating.

**Back-up Current-Limiting Fuses:** A back-up current-limiting fuse is a fuse that can interrupt any current between its rated minimum interrupting current and its maximum interrupting current. Back-up fuses are not designed or intended to open under overload conditions.

**Continuous Ampere Rating at 40°C:** The continuous amp rating defines the thermal capability of the fuse per ANSI C37.46 and should not be the sole factor in fuse selection.



### Ratings:

#### Amp-Trap A240R

**Volts** : 2.4kV AC  
**Amps** : 1 to 36R  
**IR** : 65kA Sym

#### A480R

**Volts** : 4.8kV AC  
**Amps** : 2 to 36R  
**IR** : 50kA Sym

#### A072F

**Volts** : 7.2kV AC  
**Amps** : 2 to 24R  
**IR** : 50kA Sym

### 9F60 SERIES TYPE EJ-2

#### 9F60

**Volts** : 2.54kV AC  
: 5.08kV ac

**Amps** : 2 to 36R  
**IR** : 50kA Sym

### Approvals:

- Amp-Trap: UL File E93367
- 9F60: UL File E191980



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## Amp-Trap® and 9F60 Series

### 4.8kV / 5.08kV Ferrule Mounted Fuses:

#### 4.8kV R-Rated Amp-Trap Series

12.5" (317 mm) Clip Centers – Barrel diameter size D (3")



Catalog No.	Size	Continuous Amp rating at 40°C	Minimum Interrupting Rating RMS Amp	No of Barrels	Fig.	Indicating	Dimension L Inches (mm)	1 Phase interrupting rating	
								UL Component Recognition Max IR RMS Sym	Max Voltage Tested Max IR RMS Sym
A480R2R-1	2R	70	190	1	A	Yes	15.88 (403)	65kA at 5.5kV	65kA at 5.5kV
A480R3R-1	3R	100	225						
A480R4R-1	4R	130	330						
A480R5R-1	5R	150	400						
A480R6R-1	6R	170	500						
A480R9R-1	9R	200	740						
A480R12R-1	12R	230	955	2	B		64kA at 5.5kV	64kA at 5.5kV	
A480R18R-1	18R	390	1440						
A480R24R-1	24R	450	1910						
A480R36R-1	36R**	650	2810	3	C				

#### 4.8kV R-Rated Amp-Trap Series with Hookeye

12.75" (324 mm) Clip Centers – Barrel diameter size D (3")



Catalog No.	Size	Continuous Amp rating at 40°C	Minimum Interrupting Rating RMS Amp	No of Barrels	Fig.	Indicating	Dimension L Inches (mm)	1 Phase interrupting rating	
								UL Component Recognition Max IR RMS Sym	Max Voltage Tested Max IR RMS Sym
A480R2R-1HE	2R	70	190	1	A	Yes	16.13 (410)	50kA at 5.08kV	63kA at 5.5kV
A480R3R-1HE	3R	100	225						
A480R4R-1HE	4R	130	330						
A480R5R-1HE	5R	150	400						
A480R6R-1HE	6R	170	500						
A480R9R-1HE	9R	200	740						
A480R12R-1HE	12R	230	955	2	B				
A480R18R-1HE	18R	390	1440						
A480R24R-1HE	24R	450	1910						

Blown Fuse Indicator  
2 Lb. Force (Tripped)

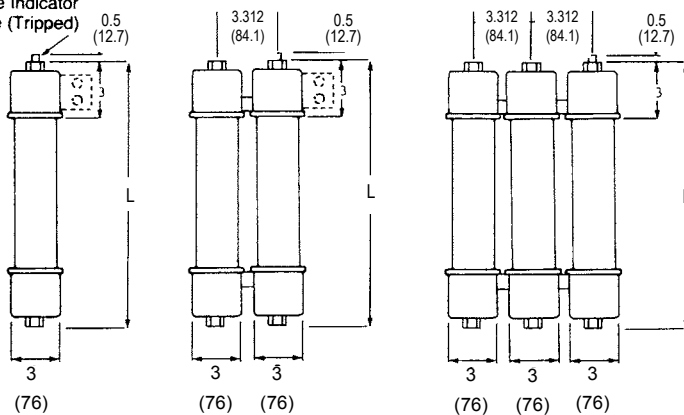
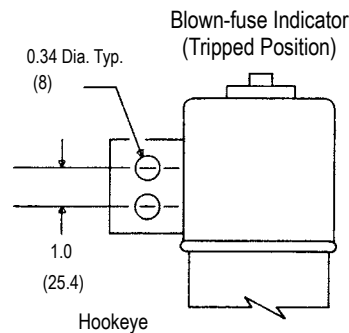


Figure A

Figure B

Figure C



# Motor Protection

## Amp-Trap® and 9F60 Series



### 5.08kV R-Rated 9F60 EJ-2 Series

12" (305 mm) Clip Centers – Barrel diameter size D (3")

Catalog No.	Size	Continuous Amp rating at 40°C	Minimum Interrupting Rating RMS Amp	No of Barrels	Fig.	Indicating	Dimension L Inches (mm)	1 Phase interrupting rating	
								UL Component Recognition Max IR RMS Sym	Max Voltage Tested Max IR RMS Sym
9F60LJD502	2R	70	195	1	D*	Yes	15.97 (406)	50kA at 5.08kV	50kA at 5.08kV
9F60LJD503	3R	100	270						
9F60LJD504	4R	130	370						
9F60LJD506	6R	170	580						
9F60LJD509	9R	200	820						
9F60LJD512	12R	230	1150						
9F60MJD518	18R	390	1800	2	E*				
9F60MJD524	24R	450	2400						
9F60LJN302	2R	70	195	1	D*	No	15.97 (406)	50kA at 5.08kV	50kA at 5.08kV
9F60LJN303	3R	100	270						
9F60LJN304	4R	130	370						
9F60LJN306	6R	170	580						
9F60LJN309	9R	200	820						
9F60LJN312	12R	230	1150						
9F60MJN318	18R	390	1800	2	E*				
9F60MJN324	24R	450	2400						

\* Figures D & E are on page E23

### 5.08kV R-Rated 9F60 EJ-2 Series

14" (356 mm) Clip Centers – Barrel diameter size E (4") – Use clip parts 9F61BNW452

Catalog No.	Size	Continuous Amp rating at 40°C	Minimum Interrupting Rating RMS Amp	Indicating	Dimension L Inches (mm)	1 Phase interrupting rating		No of Barrels	Fig.
						UL Component Recognition Max IR RMS Sym	Max Voltage Tested Max IR RMS Sym		
9F60NLD830	30R	550	3600	Yes	19.12 (486)	50kA at 5.08kV	50kA at 5.08kV	2	F
9F60NLD836	36R	650	4200						

