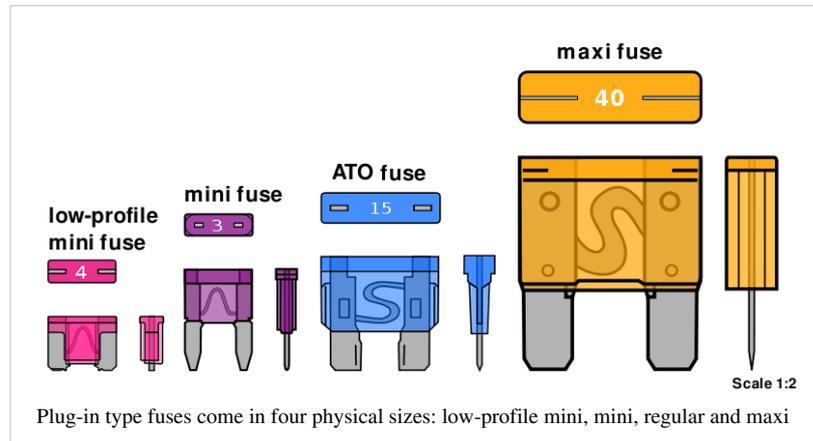


Fuse (automotive)

Automotive fuses are a class of fuses used to protect the wiring and electrical equipment for vehicles. They are generally rated for circuits no higher than 24 volts direct current, but some types ^[1] ^[2] are rated for 42-volt electrical systems. They are occasionally used in non-automotive electrical products.



Blade type

Plug-in fuses (also called blade or spade fuses), with a plastic body and two prongs that fit into sockets, are mostly used in automobiles. These types of fuses come in four different physical dimensions: mini (ATM or APM), low-profile mini, regular (ATO, ATC, or APR) and maxi (APX). Blade type fuses were developed in 1976 for low-voltages use in motor vehicles. Blade type fuses can be mounted in fuse blocks, in-line fuse holders, or fuse clips.

Type	Dimensions L x W x H	Ampere ratings
Mini	10.9 x 3.6 x 16.3 mm	2A, 3A, 4A, 5A, 7.5A, 10A, 15A, 20A, 25A, 30A
Low-Profile Mini	10.9 x 3.81 x 8.73 mm	2A, 3A, 4A, 5A, 7.5A, 10A, 15A, 20A, 25A, 30A
Regular	19.1 x 5.1 x 18.5 mm	1A, 2A, 3A, 4A, 5A, 7.5A, 10A, 15A, 20A, 25A, 30A, 35A, 40A
Maxi	29.2 x 8.5 x 34.3 mm	20A, 30A, 40A, 50A, 60A, 70A, 80A, 100A

Where space permits, a miniature circuit breaker is sometimes used to replace a blade-type fuse in the same fuse holder.

Color-coding

Blade fuses use a color-coding standard. ^[3] The mini (ATM / APM) and regular (ATO / ATC / APR) style fuses use the same color-coding system, while the larger maxi (APX) fuses use a different system, with only some colors representing the same current ratings.

Mini, Low-Profile Mini, and Regular blade-type color-coding:

Color	Current (A)
black*	1
grey	2
violet	3
pink	4
orange/tan	5
brown	7.5
red	10
aqua/blue	15
yellow	20
clear/natural	25
green	30
blue green*	35
amber*	40

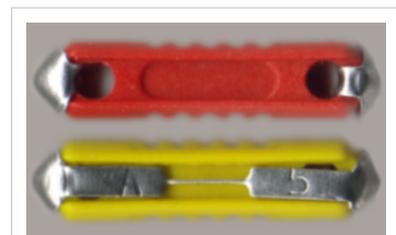
* = available in regular fuses only

Maxi Color-coding:

Color	Current (A)
yellow	20
grey	25
green	30
brown	35
orange	40
red	50
blue/aqua	60
tan	70
clear/natural	80
purple	100

Bosch type

Bosch type fuses (also known as torpedo or ATS type fuses) are used in old (often European) automobiles. The physical dimension of this type of fuse is 6x25 mm with conical ends. Bosch type fuses usually use the same color coding for the rated current. The DIN standard is 72581/1. The size of the fuse is: 6x25 mm.



Bosch type fuse (used in older cars)

Color	Ampere
yellow	5A
white	8A
red (or green)	16A
blue	25A
grey	40A

Lucas type

Lucas type fuses are used in old British-made or assembled automobiles. The physical length of this type of fuse is either 1 inch or 1.25 inch, with conical ends. Lucas type fuses usually use the same color coding for the rated current. Lucas fuses have three ratings; the continuous current they are designed to carry, the instantaneous current at which they will fuse, and the continuous current at which they will also fuse. The figure found on Lucas fuses is the continuous fusing current which is twice the continuous ampere rating that the system should be using; this can be a source of confusion when replacing Lucas fuses with non Lucas fuses.

Color	Continuous ampere	Instantaneous fusing ampere	Continuous fusing ampere
Blue	1.5A	3.5A	3A
Yellow	2.25A	5A	4.5A
Red on Yellow	2.5A	6A	5A
Green	3A	7A	6A
Nut Brown	4A	10A	8A
Red on Green	5A	12A	10A
Green on Black	5A	12A	10A
Red on Brown	6A	14A	12A
Light Brown	7.5A	18A	15A
Pink	12.5A	30A	25A
White	17.5A	40A	35A
Purple on Yellow	25A	60A	50A
Yellow on Red	30A	75A	60A

Glass SAE fuses

North-American built automobiles up to 1981 had electrical systems protected by glass cartridge fuses rated 32 volts and current ratings from 4 amperes to 30 amperes. The fuse dimensions and characteristics are standardized by the Society of Automotive Engineers standard J554. All fuses are 1/4 inch diameter, and the length varies according to the rating of the fuse. A 4 Amp fuse is 5/8 of an inch long, a 20 Amp fuse is 1 1/4 inches long, and a 30 amp fuse is 1 7/16 inches long.

Limiter Fuses

Limiter fuses consist of a metal strip from a lock plate, for currents over 40 amperes. Frequently, these are used in close proximity to starter battery fuse boxes. They are used also in electric vehicles, e.g., in forklift trucks. Because strip fuses require the use of tools for replacement they are therefore legally considered non-serviceable components for end-users.

See also

- Fusible link

References

- [1] elfa.se - datasheet of mini type fuse (.pdf) (https://www1.elfa.se/data1/wwwroot/webroot/Z_DATA/623e2b00-75a4-11dc-b309-005056c00008.pdf)
- [2] elfa.se - datasheet of maxi type fuse (.pdf) (https://www1.elfa.se/data1/wwwroot/webroot/Z_DATA/7fac31f0-75a4-11dc-b309-005056c00008.pdf)
- [3] carcare.org/Electrical/fuses_breakers - Electrical System: Fuses & Circuit Breakers (http://www.carcare.org/Electrical/fuses_breakers.shtml)