



## AERONAUTICS – CIVIL / MILITARY



### ACTIVE FUSE PROTECTION SYSTEM

Safran and Pyroalliance both design and manufacture a large variety of highly reliable equipment for aerospace applications.

In the field of electrical propulsion for aircraft, electrical protection systems are mandatory safety elements to grant flight security. Fuse protection systems implemented as circuit-breakers are in particular very precious embarked devices to protect from risks of fire on board.

Because of the extreme rapidity requested for circuit breaking in case of high voltage / high intensity, pyrotechnic actuation has been deemed the most relevant technology. Safran and Pyroalliance have therefore combined their skills and backgrounds to design a cutting-edge solution dedicated to that application.

# ACTIVE FUSE PROTECTION SYSTEM

## Operating mode

The fuse protection system is based on a pyrotechnic pusher designed to open contact and break the fuse in a very short response time.

After receiving a low current electrical order, the pyrotechnic compound, based on proven airbag technology will generate a gas pressure inducing inner piston translation. This high energy translation permits to open the electrical contact with the busbar and break the electrical fuse in a short response time.

## Benefits

- ❖ Ability to cut circuit with no current
- ❖ Max. short circuit current : 4000A under 800V
- ❖ Auto trigger on current threshold with settable integrated sensor
- ❖ Extremely short response time < 4 ms
- ❖ High reliability level over vehicle lifetime =  $1-2 \cdot 10^{-6}$  at 90% Confidence Level
- ❖ Compliant with aeronautical environment - DO-160G standard (standard level)



*Pyroalliance has designed the pyro-actuator which is incorporated in the pyrofuse*

## Typical performances and features

### Dimensions

<b>Size</b>	127 x 52 x 41 mm (Full product)
	55 x 18 x 18 mm (Pyro actuator)
<b>Weight</b>	< 400 g (Full product)
	< 40 g (Pyro actuator)

### Electrical performance

Continuous current	0 to 400 A Normal
Max. short circuit current	4000 A under 800 Vdc
<b>Pyro- All fire current</b>	1,75 A under 5 ms
<b>Pyro- No fire current</b>	≤ 0,4 A

### Temperature

Operating Temperature	-55°C / +90°C
Storage Temperature	-10°C / +40°C

### Other Data

Reliability	99.999998% (90% CL)
Storage Life Time	7 years
<b>Operational Life Time</b>	3 years
<b>Qualification standard</b>	DO-160G
<b>Patent</b>	Patented solution

## CLASSIFICATION

### Transport regulation

- Out of Class 1

### Not restricted by ITAR regulation

For more information please contact us.  
See below.

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**Produced by the Communication  
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