

# PSS - Pyrotechnic Safety Switch

Reliable safeguard against motor vehicle fires and electric shock

In case of an accident, the safety switch is triggered by the airbag electronic and disconnects the battery from the starter-/alternator cable in less than a millisecond. This prevents from short circuits that might lead to a vehicle fire.

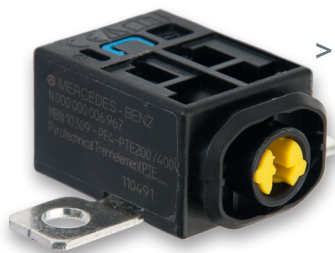
The pyroswitch PSS is supplied to premium OEMs since years. In 2015 the 16.000.000th device was produced - without any customer complaints.



**PSS1** > In mass production for leading European car makers since 2004

> Breaking capacity up to 400 V DC

> Version for under hood applications available



**PSS2** > The second generation, available since 2009

> Cost, size, and weight optimized for 12-V-systems

> Compatible to PSS1

> Suitable for under hood applications



## Application of PSS1 or PSS2

- > Fast and safe emergency power disconnection
- > Crash protection of starter-/alternator cable
- > Fast over-current protection in combination with integrated current sensing module
- > Over-current and crash protection of power packs for electric drive and hybrid applications

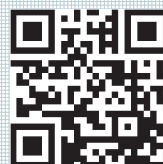
## Advantages

- > Safe disconnection based on proven airbag technology
- > Stable, one piece conductor, reliable contact
- > Highly reliable over vehicle lifetime
- > Robust design, solid standby operation
- > Application for cars, trucks, and hybrid vehicles

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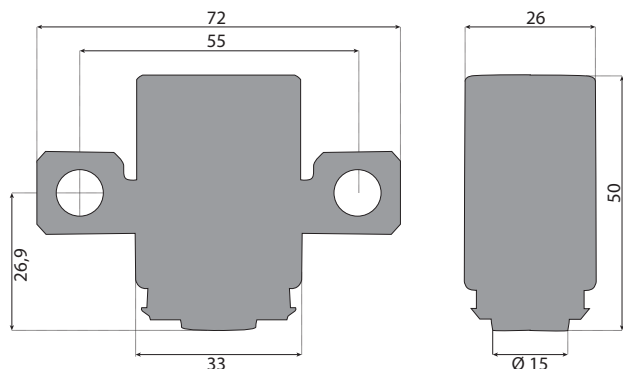
**Autoliv**

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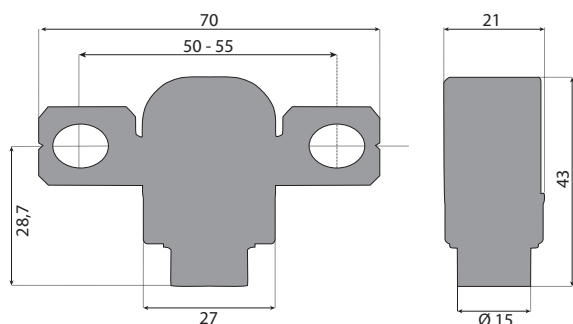
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## Measurements

### PSS1

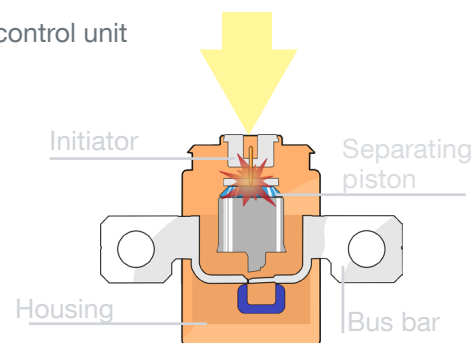


### PSS2

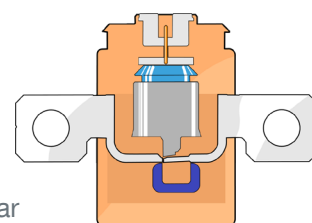


## Function

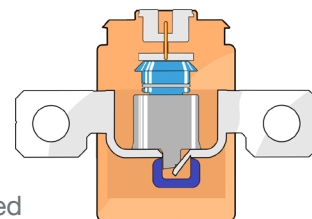
Trigger pulse of control unit  
deploys initiator



Combustion and  
acceleration of piston



Cutting edge hits bus bar



Disconnection completed

## Technical data

Technical data	PSS1	PSS2	Comment
Breaking time / bus bar	100 $\mu$ S	100 $\mu$ S	
Bus bar resistance	<0,1m $\Omega$	<0,1m $\Omega$	at room temperature
Bus bar profile	32 mm <sup>2</sup> 10 mm <sup>2</sup>	22 mm <sup>2</sup> 10 mm <sup>2</sup>	nominal at separation point
Continuous current (24hrs)	300 A 200 A	300 A 200 A	at 85° C at 125° C
Peak current	600 A / 60 s 2000 A / 10 s	600 A / 60 s 2000 A / 5 s	at room temperature
Breaking capacity (under resistive load)	2000 A at 32 V DC 250 A at 400 V DC	2000 A at 32 V DC	
Max. operation temperature	125° C	125° C	
Gross weight	65 g	40 g	
Bus bar interface	2 holes $\varnothing$ 8,7 mm	2 slots 8,6 x 11 mm	for bolts M8
Initiator	glass to metal sealed initiator, qualification according AK LV and USCAR		
Connector interface	retainer with shorting clip according AK 1 interface, ready for sealed connector IP65		