

# Low Voltage Products

PowerLine Switch Fuses for the Ultra-Rapid Fuses

Brochure ULTRAR 1 GB 00-10

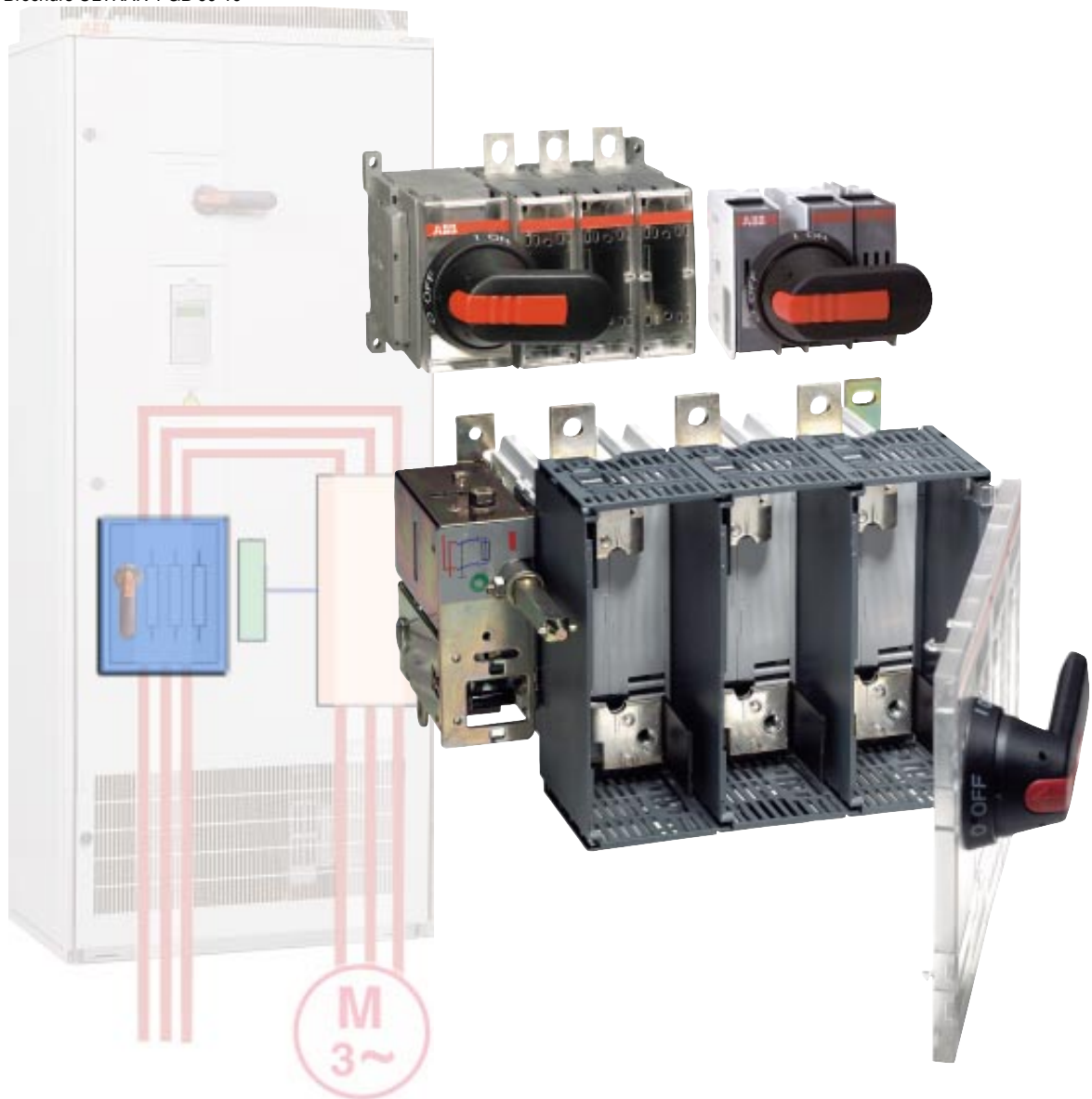
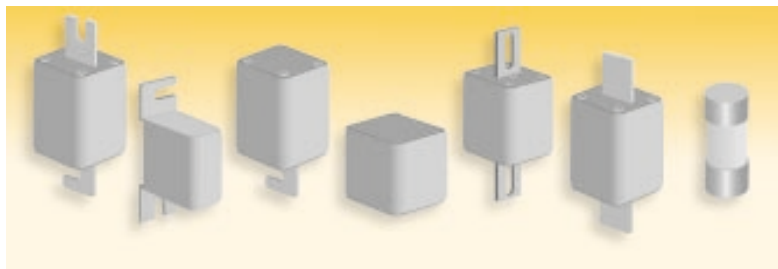


ABB Building Technologies



# PowerLine OS and OESA Switch

PowerLine switch fuses are now available for the protection of power semi-conductors.



## Switch Fuse range OS 32...160



OS Switch fuses, 32A...160A are available for

- Blade type DIN80 fuses (per DIN 43653), body sizes 000
- Cylinder type fuses, body sizes 10x38, 14x51, 22x58, 27x60
- Knife type fuses (per DIN 43620), body sizes 000 or 00

## Switch Fuse range OESA 250...800

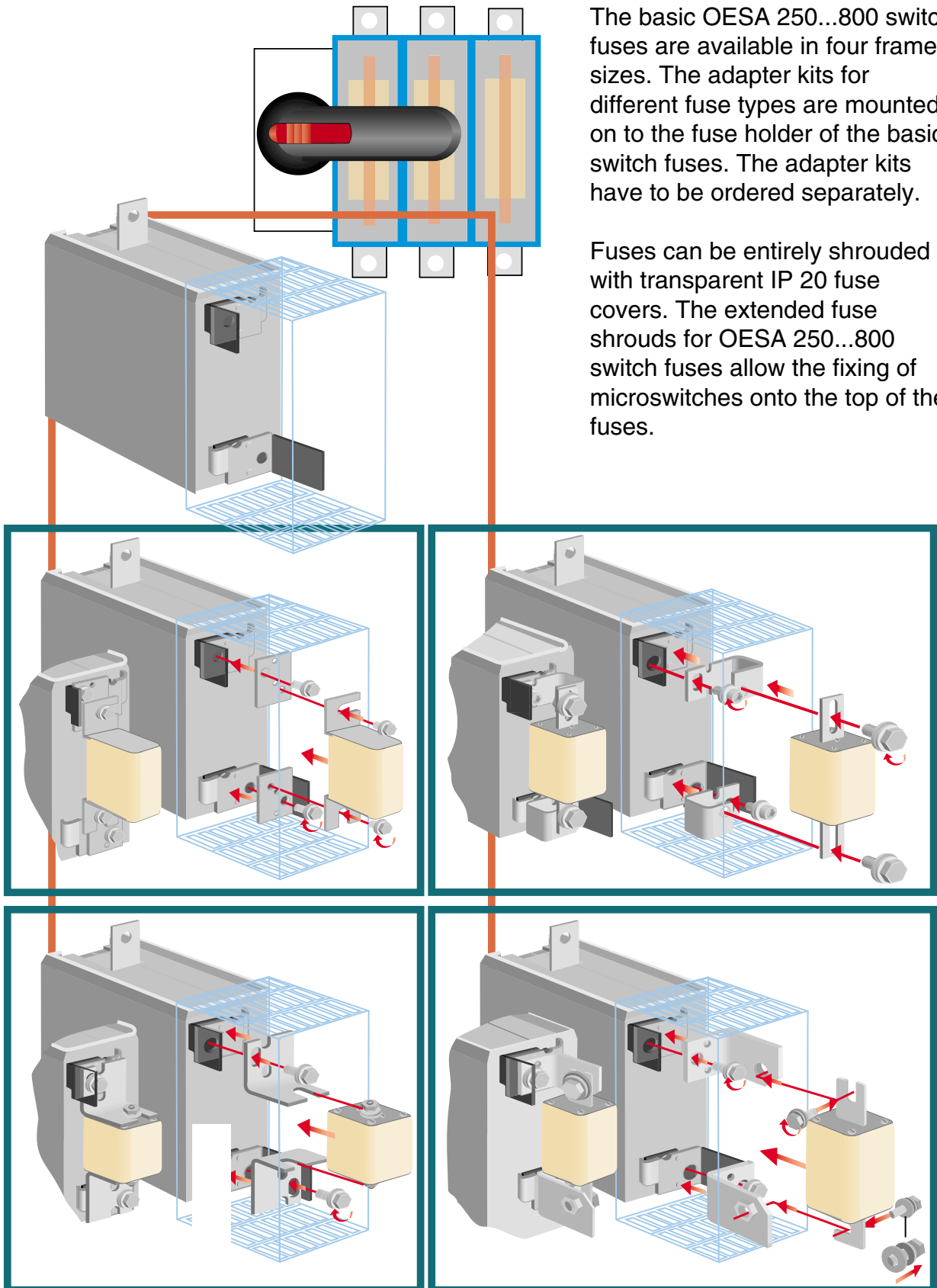


OESA switch fuses, 250...800A are available for

- DIN blade type fuses  
*DIN 80, DIN 110 and DIN 140*
- French blade type fuses  
*700V and 1250V*
- End contact fuses  
*700V and 1250V*
- American standard square body fuses  
*700V, short and long blades and 1250V*

# Fuses for the Ultra-Rapid Fuses

## Adapter kits for OESA 250...800

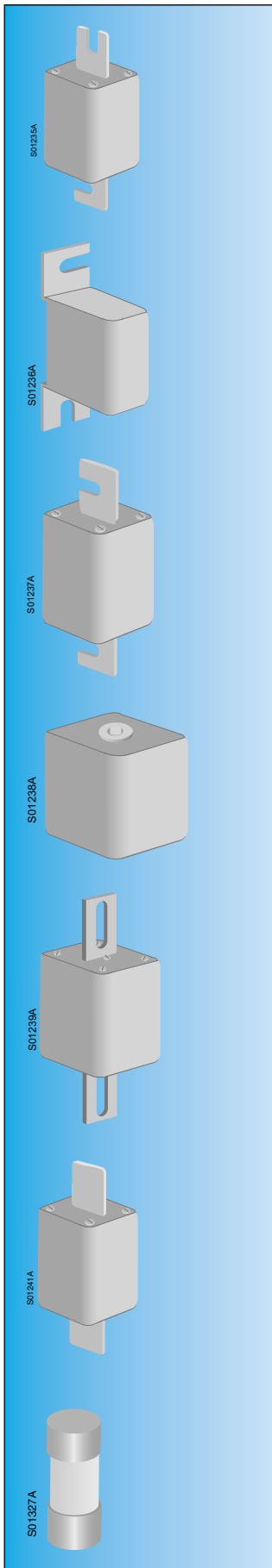


S01326A

# PowerLine

Switch fuses for the protection of power semiconductors

## Switch fuses are available for following fuse types



Blade type DIN80 (per DIN 43 653)  
Blade type DIN110 (per DIN 43 653)  
Blade type DIN140 (per DIN 43 653)

Body sizes 0, 1\*, 1, 2 and 3

Blade type DIN80 (per DIN 43 653)

Body sizes 000 and 00

French blade type  
700 V or 1250 V

Body sizes 0, 1\*, 1, 2 and 3

End contact type, single hole  
700 V or 1250 V

Body sizes 00, 0, 1\*, 1, 2 and 3

American blade type  
Short or long blade

Body sizes 0, 1\*, 1, 2 and 3

Knife type per DIN 43 620

Body sizes 000, 00, 0, 1, 2 and 3

Cylinder type

Body sizes 10x38, 14x51,  
22x58 and 27x60

1\* = Bussmann fuse link size

# PowerLine

## Switch fuses for the protection of power semiconductors

### Technical information

#### When the Fuse and Switch Fuse are selected, the following shall be evaluated:

- The operational current shall be lower than the maximum ratings of the switch fuse, see the table below.
- The cut-off current of the fuse at actual prospective current should be checked. The value must be lower than the value given for the switch fuse, see the table below.
- The actual power dissipation of the fuse at the load current shall be lower than the maximum allowed power dissipations given in table below.

#### Maximum ratings: Current / fuse power dissipation

	Fuse Body size	Enclosure	
		ventilated	enclosed
<b>OS 32R_</b>			
	For all suitable fuse sizes	32A / 3.5W	32A / 3.5W
<b>OS 63R_</b>			
	For all suitable fuse sizes	63A / 7.5W	63A / 7.5W
<b>OS 160R_</b>			
	For all suitable fuse sizes	160A / 12W 135A / 12W	160A / 10W 135A / 12W
<b>OESA 250R_</b>			
	00	250A / 42W	250A / 30W
	0 (1*)	250A / 41W	250A / 31W
	1	250A / 40W	250A / 25W
<b>OESA 400R_</b>			
	1 2	400A / 42W 400A / 35W	400A / 32W 400A / 25W
<b>OESA 630R_</b>			
	1 and 2	500A / 60W 600A / 50W	500A / 50W 600A / 37W
	3	500A / 50W 600A / 37W	450A / 37W 600A / 27W
<b>OESA 800R_</b>			
	2	700A / 60W 720A / 50W	620A / 45W 720A / 35W
	3	680A / 55W 720A / 46W	610A / 42W 720A / 30W

#### Max. allowed cut-off current, peak value

(refer to single phase fuse tests)

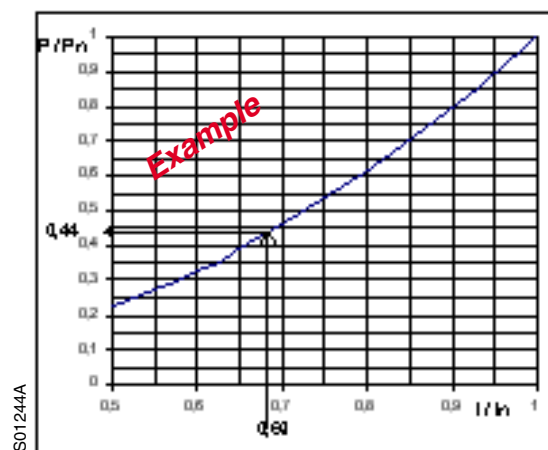
	Rated conditional short-circuit current r.m.s.		
	80 kA, 415V	100 kA, 500V	50 kA, 690V
<b>OS 32R_</b>	9 kA	7.5 kA	6 kA
<b>OS 63R_</b>	17 kA	17 kA	13 kA
<b>OS 160R_</b>	22 kA	22 kA	15 kA
<b>OESA 250R_</b>	40 kA	40 kA	35 kA
<b>OESA 400R_</b>	40 kA	40 kA	35 kA
<b>OESA 630R_</b>	75 kA	75 kA	60 kA
<b>OESA 800R_</b>	75 kA	75 kA	60 kA

#### Example

The fuse required for application is size 2 with a rated current of 550 A and a rated power dissipation of 77 W. The operational current is 380 A, the switch fuse is mounted in a ventilated enclosure.

The actual power dissipation of the fuse is determined:  
The ratio between the operational current and the rated current of the fuse is  $380 / 550 = 0,69$ .  
From the curve  $P/P_n = f(I/I_n)$  given by the fuse manufacturer, the ratio  $P/P_n$  is thus determined, and in this example it is 0,44.  
The power dissipation is  $0,44 \times 77W = 34 W$ .

From the table for OESA 400R\_ maximum ratings it is seen that the operational current (380A) as well as the fuse power dissipation (34 W) are lower than the max. ratings. The required fuse can be used with switch fuse OESA 400R\_.  
See also the operational AC 23 ratings, the table on the next page.



Note: See the actual curves in fuse manufacturers catalogue.

# PowerLine

## Switch fuses for the protection of power semiconductors

### Ordering information OS32...160

#### Switch fuses OS32...160 for cylinder type fuses, 3-pole

The delivery includes: Black IP65 handle I-O and ON-OFF indication, type OHB45J5 (OS Mini), OHB65J6 (OS63...160), a shaft OXP5x150 (OS Mini) and OXP6x161 (OS63...160), built-in fuse shrouds, interlocked in ON-position, protected tunnel terminals (OS Mini and OS63), terminal bolt packing (OS160). Further technical information and accessories, please see our catalogue OS\_OESA1GB.

Fuse type	$I_{th}$	Rated operat. current AC21A...23A [A] up to 690V	Type <sup>1)</sup>	Order number	Weight [kg]
<b>Switch fuse type OS Mini</b>					
10 x 38	32A	32		OS32RF1210	0.7
14 x 51	32A	32		OS32RF1214	0.7
<b>Switch fuse type OS 63</b>					
14 x 51	63A	63 <sup>2)</sup>		OS63RF1214	1.3
22 x 58	63A	63 <sup>2)</sup>		OS63RF1222	1.3
27 x 60	63A	63 <sup>2)</sup>		OS63RF1227	1.3
<b>Switch fuse type OS 160</b>					
22 X 58	160A	160 <sup>2)</sup>		OS160RF0322	1.5
27 X 60	160A	160 <sup>2)</sup>		OS160RF0327	1.5

#### Switch fuses OS160 for blade type DIN 80 fuses (per DIN 43653), 3-pole

The delivery includes: Black IP65 handle I-O and ON-OFF indication, type OHB65J6, a shaft OXP6x161, built-in fuse shrouds, interlocked in ON-position, terminal bolt packing.

Further technical information and accessories, please see our catalogue OS\_OESA1GB.

Fuse type	$I_{th}$	Rated operat. current AC21A...23A [A] up to 690V	Type <sup>1)</sup>	Order number	Weight [kg]
<b>Switch fuse type OS 160</b>					
000 DIN80	160A	160 <sup>2)</sup>		OS160RD0380	1.5

#### Switch fuses OS63...160 for knife type fuses (per DIN 43620), 3-pole

The delivery includes: Black IP65 handle I-O and ON-OFF indication, type OHB65J6, a shaft OXP6x161, built-in fuse shrouds, interlocked in ON-position, protected tunnel terminals (OS63), terminal bolt packing (OS160).

Further technical information and accessories, please see our catalogue OS\_OESA1GB.

Fuse type	$I_{th}$	Rated operat. current AC21A...23A [A] up to 690V	Type <sup>1)</sup>	Order number	Weight [kg]
<b>Switch fuse type OS 63</b>					
000, 00	63A	63 <sup>2)</sup>		OS63RD12	1.3
<b>Switch fuse type OS 160</b>					
000, 00	160A	160 <sup>2)</sup>		OS160RD03	1.5



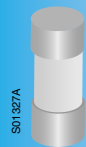
OS32R



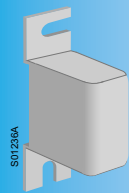
OS63R



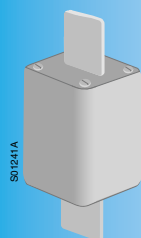
OS160R



Cylinder type fuses



Blade type DIN 80 fuses



Knife type fuses

<sup>1)</sup> Fuse shroud can't be used if a micro switch is provided

<sup>2)</sup> at 690V/AC23, utilization category B

# PowerLine

## Switch fuses for the protection of power semiconductors Ordering information OESA 250...800



### Basic switch fuses OESA 250...800, 3-pole

The basic switch fuse delivery includes: Black IP65 handle with I - O and ON - OFF - indication type OHB125J12 for OESA250...400 and OHB145J12, for OESA 630...800, shaft type OXP12X250 (length 250 mm) for OESA 250...800, transparent IP20 fuse cover, terminal bolt packing.  
Further technical information and accessories, please see our catalogue OS\_OESA1GB.

**Fuse adapters have to be ordered separately for OESA 250...800 switch fuses, see selection tables on next pages and ordering information below.**

Rated operat. current AC 23A [A]	$I_{th}$ [A]	Type	Order number	Weight [kg]
690 V	1000 V			
250	250	OESA250R03	1SCA022507R0950	7.1
400	280	OESA400R03	1SCA022492R2760	8.3
630	400	OESA630R03	1SCA022509R0710	16.0
720	400	OESA800R03	1SCA022509R0800	18.0

### Fuse adapters for OESA 250...800 switch fuses

See selection tables on next pages.

**For Switches OESA250R03/\_400R03**

Type	Order number	Weight [kg]
OESAZX1-S2	1SCA022510R8860	1.0
OESAZX1-S3	1SCA022510R8940	1.0
OESAZX1-S4	1SCA022510R9080	1.0
OESAZX1-S5	1SCA022510R9240	1.0
OESAZX1-S6	1SCA022510R9320	1.0
OESAZX1-S7	1SCA022510R9410	1.0
OESAZX1-S8	1SCA022510R9590	1.0
OESAZX1-S9	1SCA022510R9670	1.0
OESAZX1-S10	1SCA022510R9750	1.0
OESAZX1-S11	1SCA022513R2730	1.0
OESAZX1-S12	1SCA022566R3770	1.0
OESAZX1-S13	1SCA022566R3850	1.0
OESAZX1-S14	1SCA022566R3930	1.0
OESAZX1-S15	1SCA022566R4070	1.0
OESAZX1-S16	1SCA022566R4150	1.0

**For Switches OESA630R03/\_800R03**

OESAZX2-S2	1SCA022511R9210	1.0
OESAZX2-S3	1SCA022511R9390	1.0
OESAZX2-S4	1SCA022511R9470	1.0
OESAZX2-S5	1SCA022511R9550	1.0
OESAZX2-S6	1SCA022566R4230	1.0

### Fuse shroud extension kit for OESA 250...800 switch fuses

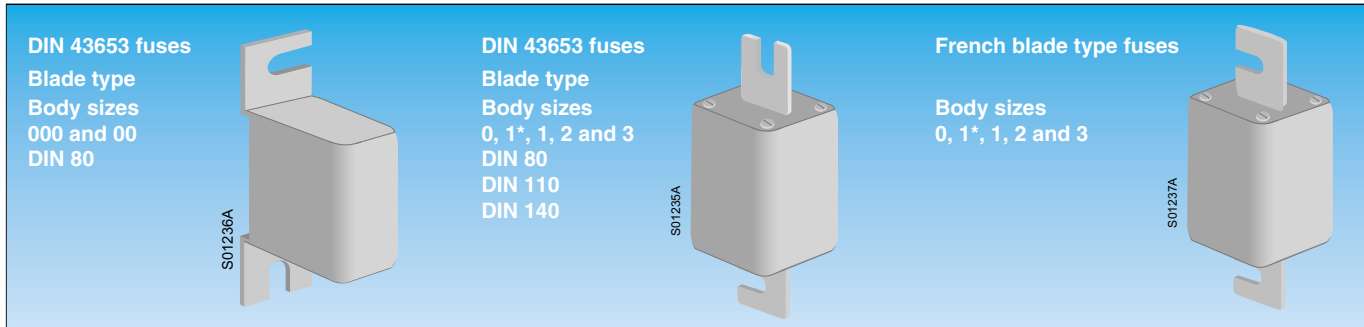
The kit is needed when a micro switch is mounted on the top of the fuse link.

The kit suits for all 3-pole switch fuses listed above.

A standard fuse cover can be mounted on the top of the extension kit, thus maintaining IP20 protection even with microswitches.

OESAZX 281	1SCA022558R3580	0.3
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**Switch fuses for the protection of power semiconductors,  
OESA 250...800**  
**Selection tables for adapter kits for DIN 43653 fuses and French  
standard fuses**



**DIN 43653 fuses, blade type**

**DIN80 (per DIN 43 653)**

Body size:	000	00	0	1*	1	2	3
OESA 250R_	OESAZX1-S9	OESAZX1-S9	OESAZX1-S7	OESAZX1-S7	OESAZX1-S7		
OESA 400R_	OESAZX1-S9	OESAZX1-S9	OESAZX1-S7	OESAZX1-S7	OESAZX1-S7	OESAZX1-S7	
OESA 630R_			OESAZX2-S2	OESAZX2-S2	OESAZX2-S2	OESAZX2-S2	
OESA 800R_			OESAZX2-S2	OESAZX2-S2	OESAZX2-S2	OESAZX2-S2	OESAZX2-S2

**DIN110 (per DIN 43 653)**

Body size:		0	1*	1	2	3
OESA 250R_			OESAZX1-S2	OESAZX1-S2	OESAZX1-S2	
OESA 400R_			OESAZX1-S2	OESAZX1-S2	OESAZX1-S2	
OESA 630R_			OESAZX2-S2	OESAZX2-S2	OESAZX2-S2	
OESA 800R_			OESAZX2-S2	OESAZX2-S2	OESAZX2-S2	OESAZX2-S2

**DIN140 (per DIN 43 653)**

Body size:				1	2	3
OESA 250R_						
OESA 400R_				OESAZX1-S6	OESAZX1-S6	
OESA 630R_				OESAZX2-S2	OESAZX2-S2	
OESA 800R_				OESAZX2-S2	OESAZX2-S2	OESAZX2-S2

**French blade type fuses**

**700V**

Body size:		0	1*	1	2	3
OESA 250R_		OESAZX1-S10	OESAZX1-S10	OESAZX1-S7		
OESA 400R_		OESAZX1-S10	OESAZX1-S10	OESAZX1-S7	OESAZX1-S7	
OESA 630R_				OESAZX2-S5	OESAZX2-S5	
OESA 800R_				OESAZX2-S5	OESAZX2-S5	OESAZX2-S5

**1250V**

Body size:		0	1*	1	2	3
OESA 250R_		OESAZX1-S12	OESAZX1-S12	OESAZX1-S2		
OESA 400R_		OESAZX1-S12	OESAZX1-S12	OESAZX1-S2	OESAZX1-S2	
OESA 630R_				OESAZX2-S5	OESAZX2-S5	
OESA 800R_				OESAZX2-S5	OESAZX2-S5	OESAZX2-S5

**with micro switches, 700V**

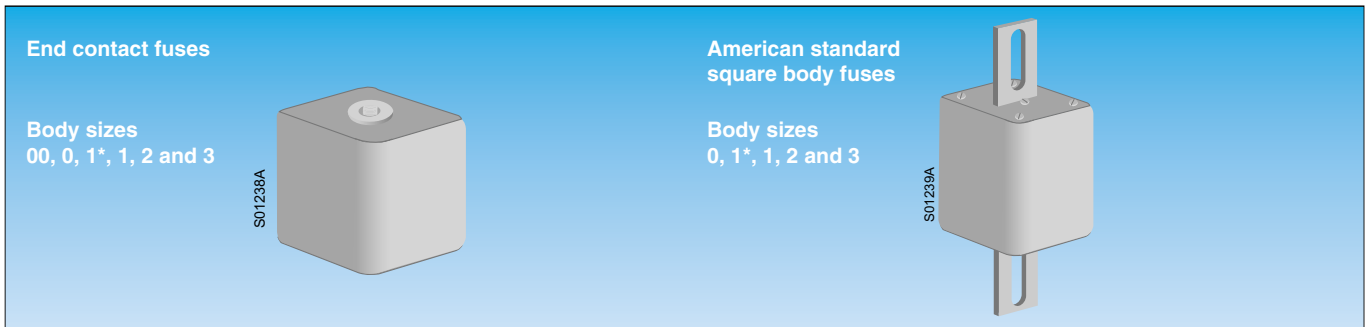
Body size:		0	1*	1	2	3
OESA 250R_		OESAZX1-S11	OESAZX1-S11	OESAZX1-S11		
OESA 400R_		OESAZX1-S11	OESAZX1-S11	OESAZX1-S11	OESAZX1-S11	
OESA 630R_				OESAZX2-S6	OESAZX2-S6	
OESA 800R_				OESAZX2-S6	OESAZX2-S6	OESAZX2-S6

**with micro switches, 1250V**

Body size:		0	1*	1	2	3
OESA 250R_		OESAZX1-S13	OESAZX1-S13	OESAZX1-S13		
OESA 400R_		OESAZX1-S13	OESAZX1-S13	OESAZX1-S13	OESAZX1-S13	
OESA 630R_				OESAZX2-S6	OESAZX2-S6	
OESA 800R_				OESAZX2-S6	OESAZX2-S6	OESAZX2-S6

Switchfuses for the protection of power semiconductors,  
OESA 250...800.

**Selection tables for adapter kits for end contact fuses and  
American standard square body fuses**



**End contact fuses**

**Flat type, body length 48-56mm, size 00 58-66mm, (700V)**

Body size:	00	0	1*	1	2	3
OESA 250R_	OESAZX1-S16	OESAZX1-S14	OESAZX1-S14	OESAZX1-S14		
OESA 400R_	OESAZX1-S16	OESAZX1-S14	OESAZX1-S14	OESAZX1-S14	OESAZX1-S3	
OESA 630R_		OESAZX2-S3	OESAZX2-S3	OESAZX2-S3	OESAZX2-S3	
OESA 800R_		OESAZX2-S3	OESAZX2-S3	OESAZX2-S3	OESAZX2-S3	OESAZX2-S3

**Flat type, body length 68-76mm, (1250V)**

Body size:	0	1*	1	2	3
OESA 250R_	OESAZX1-S15	OESAZX1-S15	OESAZX1-S15		
OESA 400R_	OESAZX1-S15	OESAZX1-S15	OESAZX1-S15	OESAZX1-S8	
OESA 630R_	OESAZX2-S3	OESAZX2-S3	OESAZX2-S3	OESAZX2-S3	
OESA 800R_	OESAZX2-S3	OESAZX2-S3	OESAZX2-S3	OESAZX2-S3	OESAZX2-S3

**American standard square body fuses**

**Blade type, 700V short blades**

Body size:	0	1*	1	2	3
OESA 250R_	OESAZX1-S5	OESAZX1-S5	OESAZX1-S5		
OESA 400R_	OESAZX1-S5	OESAZX1-S5	OESAZX1-S5	OESAZX1-S5	
OESA 630R_	OESAZX2-S4	OESAZX2-S4	OESAZX2-S4	OESAZX2-S4	
OESA 800R_	OESAZX2-S4	OESAZX2-S4	OESAZX2-S4	OESAZX2-S4	OESAZX2-S4

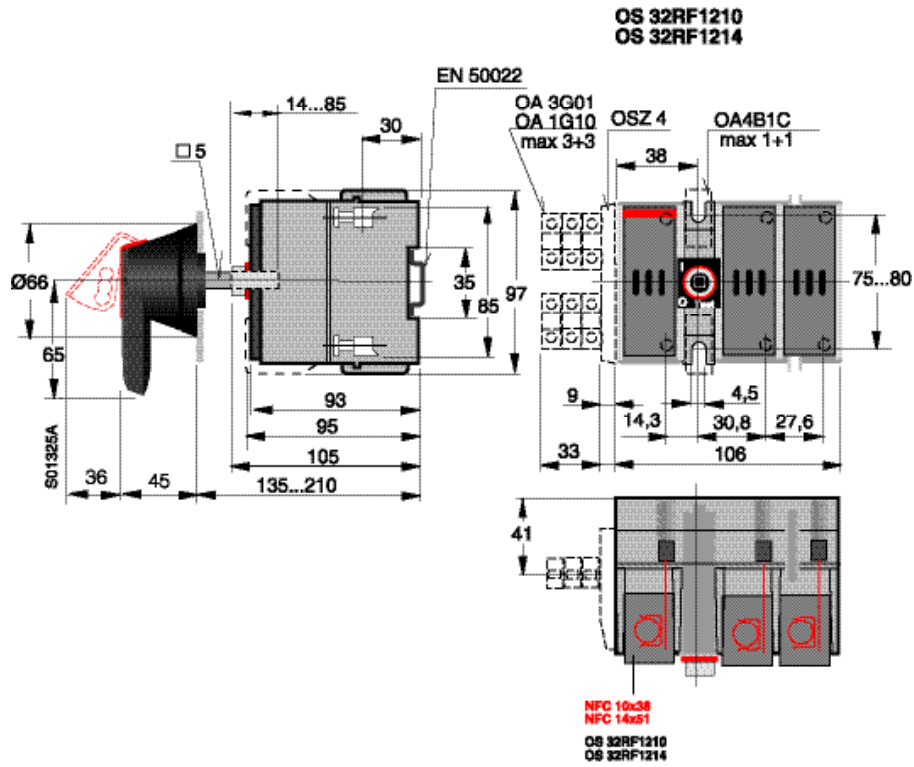
**Blade type, 700V long blades and 1250V**

Body size:	0	1*	1	2	3
OESA 250R_	OESAZX1-S4	OESAZX1-S4	OESAZX1-S4		
OESA 400R_	OESAZX1-S4	OESAZX1-S4	OESAZX1-S4	OESAZX1-S4	
OESA 630R_	OESAZX2-S4	OESAZX2-S4	OESAZX2-S4	OESAZX2-S4	
OESA 800R_	OESAZX2-S4	OESAZX2-S4	OESAZX2-S4	OESAZX2-S4	OESAZX2-S4

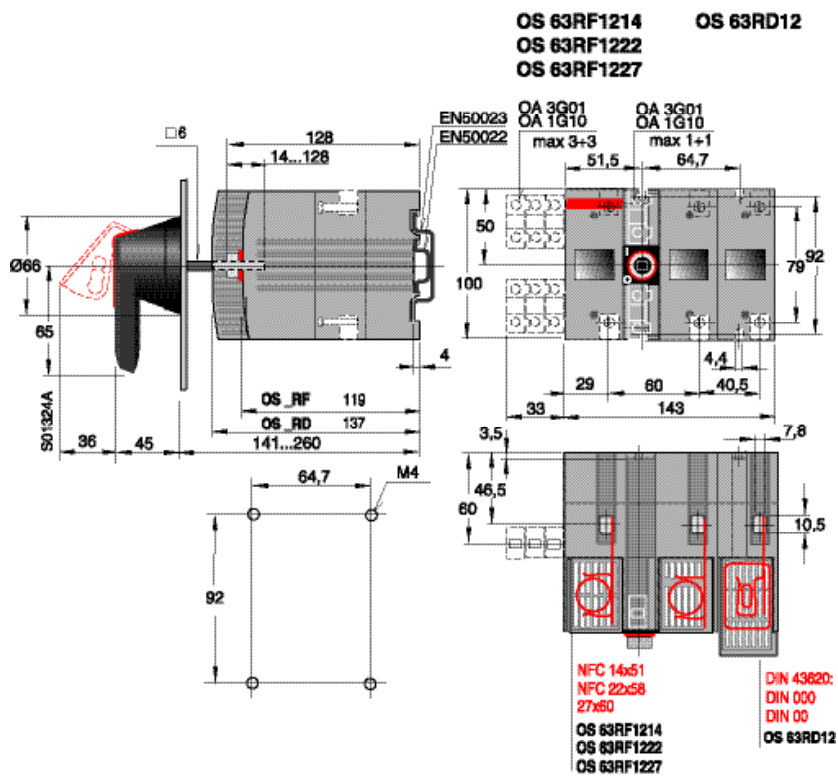
# PowerLine

Switch fuses for the protection of power semiconductors  
Dimension drawings

## OS32RF1210, OS32RF1214



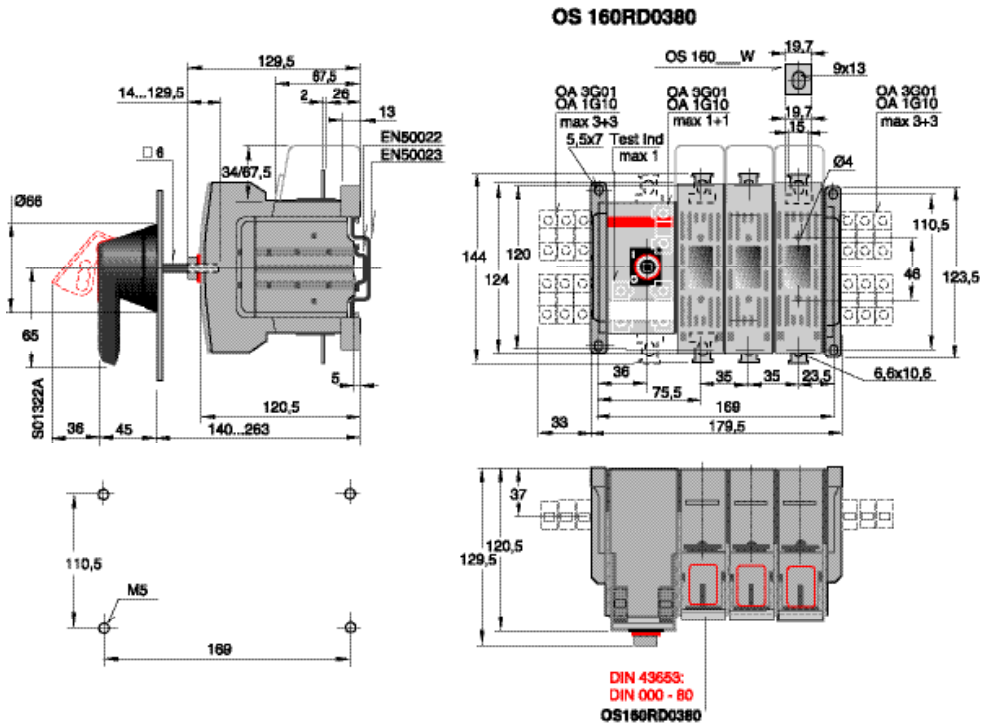
## OS63RF1214, OS63RF1222, OS63RF1227, OS63RD12



# PowerLine

Switch fuses for the protection of power semiconductors  
Dimension drawings

## OS160RD0380



## OS160RF0322, OS160RF0327, OS160RD03

