

# FUSOMAT DIN

## Fuse combination switches with tripping function

250 A to 1250 A



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### The solution for

- > Healthcare
- > Energy
- > Infrastructure & Transport
- > Industry

### Strong points

- > Automatic tripping
- > Optimum safety
- > High breaking capacity

### Conformity to standards

- > IEC 60947-3

### Function

**FUSOMAT** fuse-combination switches are manually operated 3 or 4-pole load break switches with visible breaking and a remote tripping function.

They provide load operation, safety disconnection and protection against overloads and short-circuits in any low voltage electrical circuit. They can ensure the automatic opening of the circuit together with:

- fuse blown detection system (see DDMM or FMD),
- thermal relay,
- differential relay (see RESYS),
- other safety devices.

### Advantages

#### Automatic tripping

FUSOMAT is the only fuse combination switch that allows automatic remote opening by means of a coil associated with an external device.

#### Optimum safety

Double phase breaking (upstream and downstream from the fuse) and fully visible isolation keep people and equipment protected from overcurrent.

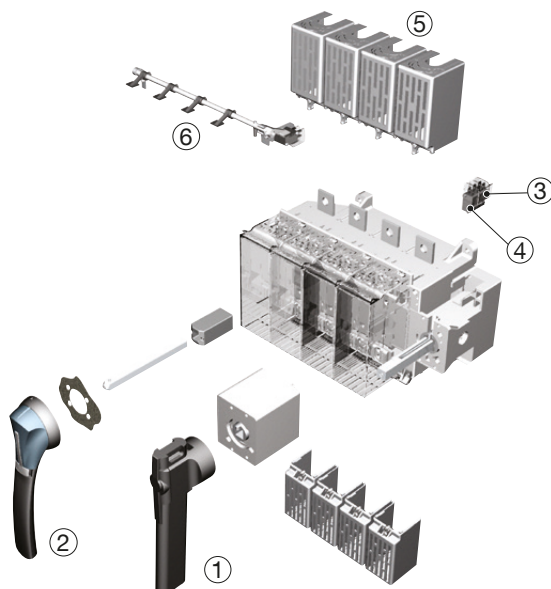
#### High breaking capacity

High breaking capacity fuses (100 kA rms) provide protection from overloads and short circuits.

### General characteristics

- For industrial fuses up to 1250 A.
- 3P or 4P available.
- Direct or external handle.
- Auxiliary contact optional.

## Configurations



Functional diagram (for further details see the installation instructions supplied with the product).

1. Direct front operation.
2. External front operation.
3. NO/NC auxiliary contact for each position.
4. NO/NC auxiliary contact with standard shunt trip coil control.
5. Terminal shroud.
6. Fuse melting detector (FMD)

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## References

### FUSOMAT DIN front operation

Device fitted with a 230 VAC shunt trip coil

Rating (A) / Fuse	N° of Poles	Appareil nu	direct handle	External handle	Shaft for external handle	Auxiliary contact position	Auxiliary contact tripping	1 <sup>st</sup> auxiliary contact blown fuse	Terminal Shrouds (1 unit)	Top terminals screen	Inter phase barrier										
250 A / 1	3 P	3650 3026	Black 3999 6201 <sup>(1)</sup>	S3 type Black IP55 1431 3511 <sup>(1)</sup>	200 mm 1401 1520 320 mm 1401 1532 <sup>(1)</sup>	1 <sup>st</sup> contact NO/NC 3999 0051 2 <sup>nd</sup> contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 3994 1304 4 P 3994 1404	3 P 3998 3040 <sup>(2)</sup> 4 P 3998 4040 <sup>(2)</sup>												
	4 P	3650 6026																			
400 A / 2	3 P	3650 3041																			
	4 P	3650 6041																			
630 A / 3	3 P	3650 3064										Black 3999 6012 <sup>(1)</sup>	Red / Yellow IP55 1432 3511	200 mm 1401 1520 320 mm 1401 1532 <sup>(1)</sup>	1 <sup>st</sup> contact NO/NC 3999 0051 2 <sup>nd</sup> contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 3994 1306 4 P 3994 1406	3 P 3998 3063 <sup>(2)</sup> 4 P 3998 4063 <sup>(2)</sup>			
	4 P	3650 6064																			
800 A / 4	3 P																				
	4 P																				
1250 A / 4	3 P	3650 3121		Black 3999 6012 <sup>(1)</sup>		200 mm 1401 1520 320 mm 1401 1532 <sup>(1)</sup>	1 <sup>st</sup> contact NO/NC 3999 0051 2 <sup>nd</sup> contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 3994 1312 4 P 3994 1412	3 P 3998 3120 <sup>(3)</sup> 4 P 3998 4120 <sup>(3)</sup>	3 P 2998 0003 4 P 2998 0004										
	4 P	3650 6121																			

(1) Standard.

(2) Top/bottom

(3) Bottom terminals screen as standard

(4) One of the T4 fuses is fitted with a striker.

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## Accessories

### direct handle

Front operation		
Current (A)	Handle colour	Reference
250 ... 630	Black	3999 <b>6201</b>
800 ... 1250	Black	3999 <b>6012</b>

Lateral operation		
Current (A)	Handle colour	Reference
250 ... 1250	Black	3999 <b>6012</b>



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### External handle

Front operation				
Current (A)	Handle type	Handle colour	External IP	Reference
250 ... 1250	S3	Black	IP55	1431 <b>3511</b>
250 ... 1250	S3	Rouge	IP55	1432 <b>3511</b>

Lateral operation				
Current (A)	Handle type	Handle colour	External IP	Reference
250 ... 1250	S3	Black	IP55	1435 <b>3511</b>
250 ... 1250	S3	Rouge	IP55	1436 <b>3511</b>



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S3 type handle

S3 type handle

### S-type handle adapter

#### Use

Enables S type handles to be fitted in place of existing older style SOCOMEC handles.

#### Dimensions

Adds 12 mm to the handle depth.

Handle colour	To be ordered in multiples of	External IP <sup>(1)</sup>	Reference
Black	1	IP65	1493 <b>0000</b>

(1) IP: protection index according to IEC 60529.



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### Alternative S type handle cover colour

#### Use

For single lever S3 type handles.

Other colours available - please contact us.

Color	To be ordered in multiples of	Handle	Reference
Light grey	50	S3 type	1401 <b>0001</b>
Dark Grey	50	S3 type	1401 <b>0011</b>



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### Shaft for external operation

#### Use

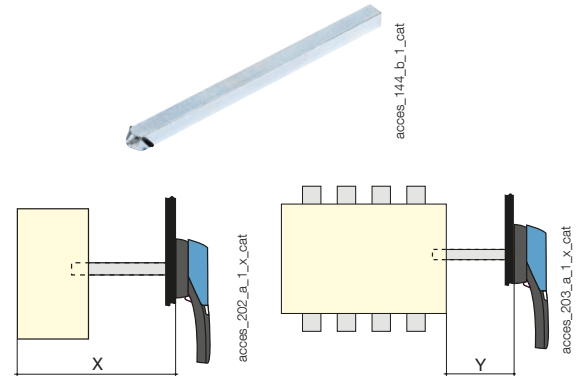
Standard lengths:  
- 200 mm  
- 320 mm.

Other lengths available -  
please contact us.

Front operation					
Current (A)	Dimension X (mm)	Shaft length (mm)	Type	Reference	
250... 400	300 ... 422	200	15 x 12	1401 <b>1520</b>	
250... 400	300 ... 542	320	15 x 12	1401 <b>1532</b>	
630 ... 1250	345 ... 467	200	15 x 12	1401 <b>1520</b>	
630 ... 1250	345 ... 587	320	15 x 12	1401 <b>1532</b>	

Lateral operation					
Current (A)	Dimension Y (mm)	Shaft length (mm)	Type	Reference	
250 ... 1250	78 ... 200	200	15 x 12	1403 <b>1520</b>	



### Auxiliary contact

#### Use

Pre-break and signalling of positions 0 and I: 1 to 2 NO/NC auxiliary contacts.

#### Coil tripping

1 to 2 NO/NC auxiliary contacts.

#### Connection to the control circuit

By 6.35 mm fast-on terminal.

#### Features

NO/NC auxiliary contact IP2.

#### Electrical Rating

30,000 operations.

### NO/NC position contact

Current (A)	Current nominal (A)	Operating current I <sub>o</sub> (A)			
		250 VAC AC-13	400 VAC AC-13	5A / 24 VDC DC-13	48 VDC DC-13
250 ... 1800	16	12	8	14	6

### NO/NC coil trip signalling

Current (A)	Current nominal (A)	Operating current I <sub>o</sub> (A)			
		250 VAC AC-13	400 VAC AC-13	5A / 24 VDC DC-13	48 VDC DC-13
250 ... 1800	16	12	8	12	2

### NO/NC changeover contact

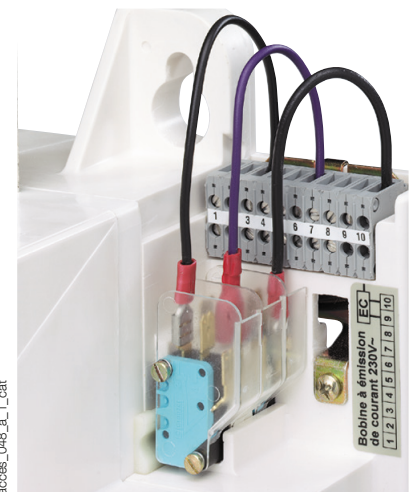
Current (A)	AC position	Reference
250 ... 1800	1 <sup>st</sup> AC	3999 <b>0051</b>
250 ... 1800	2 <sup>nd</sup> auxiliary contact	3999 <b>0052</b>

### NO/NC low level position contact

Current (A)	AC position	Reference
250 ... 1800	1 <sup>st</sup> AC	3999 <b>0111</b>
250 ... 1800	2 <sup>nd</sup> auxiliary contact	3999 <b>0112</b>

### NO/NC coil trip signalling

Current (A)	AC position	Reference
250 ... 1800	1 AC	3999 <b>0031</b>



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## Accessories (continued)

### Tripping Coil

#### Shunt trip coil

Premin.	Replacement coil Reference	Alternative coil Reference
24 VAC	3990 <b>1024</b>	3991 <b>1024</b>
48 VAC	3990 <b>1048</b>	3991 <b>1048</b>
110 VAC	3990 <b>1110</b>	3991 <b>1110</b>
230 V a.c.	3990 <b>1220</b>	included
400 VAC	3990 <b>1380</b>	3991 <b>1380</b>
12 VDC	3990 <b>2012</b>	3991 <b>2012</b>
5A / 24 VDC	3990 <b>2024</b>	3991 <b>2024</b>
48 VDC	3990 <b>2048</b>	3991 <b>2048</b>
110 / 200 VDC	3990 <b>2220</b>	3991 <b>2220</b>
220 VDC	3990 <b>2220</b>	

#### Undervoltage trip coil

Premin.	Replacement coil Reference	Alternative coil Reference
24 VAC	3990 <b>3024</b>	3991 <b>3024</b>
48 VAC	3990 <b>3048</b>	3991 <b>3048</b>
110 VAC	3990 <b>3110</b>	3991 <b>3110</b>
230 V a.c.	3990 <b>3220</b>	3991 <b>3220</b>
400 VAC	3990 <b>3380</b>	3991 <b>3380</b>
12 VDC	3990 <b>4012</b>	3991 <b>4012</b>
5A / 24 VDC	3990 <b>4024</b>	3991 <b>4024</b>
48 VDC	3990 <b>4048</b>	3991 <b>4048</b>
110 VDC	3990 <b>4110</b>	3991 <b>4110</b>
220 VDC	3990 <b>4220</b>	3991 <b>4220</b>

#### Use

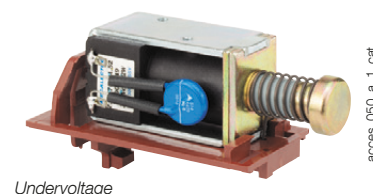
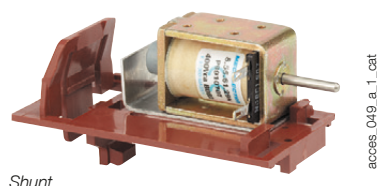
Omnipolar breaking remotely controlled by a shunt trip or undervoltage release coil.

Note: the shunt trip coil must not be supplied for more than 5s.

Coil mounted as standard on the device: shunt trip coil. To modify the coil, order one of the references opposite with the device.

#### Examples of ordering:

- FUSOMAT with shunt trip coil 230 VAC - 1 reference: FUSOMAT 250 A, 3-pole, front operation, reference 3650 3026.
- FUSOMAT with another coil type or voltage - 2 references: FUSOMAT 250 A, 3-pole, front operation with 110 VAC undervoltage trip coil: 3650 3026 + 3991 3110.



### Current-reducing resistor for undervoltage trip coil

#### Use

By limiting the current, the resistor reduces the effects on undervoltage trip coils used in continuous processes or those exposed to high ambient temperatures.

Premin.	Reference
110 VAC	3999 <b>3112</b>
230 VAC	3999 <b>3230</b>
400 VAC	3999 <b>3400</b>
110 VDC	3999 <b>4110</b>

## Fuse blown indication

### Use

For DIN fuse cartridge with striker.

### Electrical principle

An NO/NC auxiliary contact detects fuse blowing.

### Connection to the control circuit

By 6.35 mm fast-on terminal.

### Electrical Rating

30,000 operations.

NO/NC changeover contact			
Current (A)	N° of Poles	AC position	Reference
250... 400	3 P	1 <sup>st</sup>	3994 1304
250... 400	4 P	1 <sup>st</sup>	3994 1404
630	3 P	1 <sup>st</sup>	3994 1306
630	4 P	1 <sup>st</sup>	3994 1406
800 ... 1250	3 P	1 <sup>st</sup>	3994 1312
800 ... 1250	4 P	1 <sup>st</sup>	3994 1412
250 ... 1250	3/4 P	2 <sup>nd</sup>	3994 1902

### Features

Current (A)	Current nominal (A)	Operating current I <sub>e</sub> (A)			
		250 VAC AC-13	400 VAC AC-13	5A / 24 VDC DC-13	48 VDC DC-13
250 ... 1250	16	12	8	12	2

## Terminal Shrouds

### Use

Top or bottom protection from direct contact with terminals or connection parts.

### Advantage

Perforations allow remote thermographic inspection without the need to remove the shrouds.

### For FUSOMAT

Current (A)	N° of Poles	Position	Reference
250... 400	3 P	top or bottom	3998 3040 <sup>(1)</sup>
250... 400	4 P	top or bottom	3998 4040 <sup>(2)</sup>
630	3 P	top or bottom	3998 3063 <sup>(1)</sup>
630	4 P	top or bottom	3998 4063 <sup>(2)</sup>

<sup>(1)</sup> Reference comprises 3 parts.

<sup>(2)</sup> Reference comprises 4 parts.



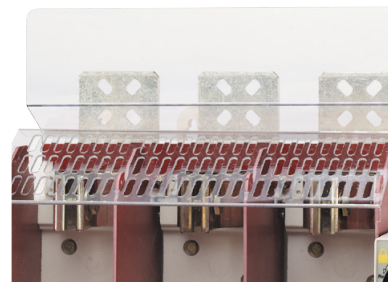
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## Terminals protection screen

### Use

Top or bottom protection against direct contact with terminals or connecting parts.

Current (A)	N° of Poles	Position	Reference
800 ... 1250	3 P	Top	3998 3120
800 ... 1250	4 P	Top	3998 4120
800 ... 1250	3/4 P	Bottom	included



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## Accessories (continued)

### Inter-phase barrier

#### Use

Safety isolation between the terminals, essential for use at 690 VAC or in a polluted or dusty atmosphere.



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Current (A)	N° of Poles	Reference
800 ... 1250	3 P	2998 0003
800 ... 1250	4 P	2998 0004

### Handle key interlocking accessories

#### Use

- Locking in position 0 of the front operation handle:
- Using a padlock (not supplied) and standard padlocking function of the handle
- Using RONIS 1104 A lock (key BC 3318) to be mounted directly on the padlockable handle
- Using CASTELL K lock (not supplied)
- Using RONIS EL11AP lock (not supplied)

#### Locking using RONIS EL 1104 A lock (supplied)

Current (A)	Command	Reference
250 ... 1800	front direct	3999 8104

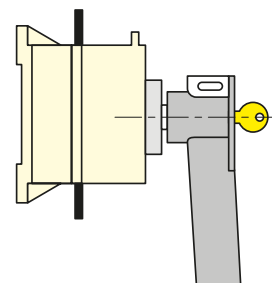
#### Locking using RONIS EL 11AP lock (not included)

Current (A)	Command	Reference
250 ... 1800	handle	1499 7701
1600 ... 1800	front direct	3999 6117 <sup>(1)</sup>

#### Locking using CASTELL K (not supplied)

Current (A)	Command	Reference
250 ... 1250	handle	1499 7702

(1) For SIDERMAT fuse-combination switches only



RONIS 1104 A lock.

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### Label Holder

#### Use

Recognisable self-adhesive label allowing identification of the devices.

Dimensions W x H (mm)	To be ordered in multiple of	Reference
18 x 13	50	7769 9999



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### Other specific accessories

#### Use

- Customised protection screens (for specific dimensions or high ambient temperatures).
- Connection accessories.
- Mounting plates for standard racks
- For specific atmospheric conditions.

## Features

According to IEC 60947-3

	<b>FUSOMAT</b>				
	<b>250 A</b>	<b>400 A</b>	<b>630 A</b>	<b>800 A</b>	<b>1250 A</b>
<b>Thermal current <math>I_{th}</math> (40 °C)</b>					
NFC/DIN fuse size	1	2	3	4	4
Rated insulation voltage $U_i$ (V)	1000	1000	1000	1000	1000
Rated impulse withstand voltage $U_{imp}$ (kV)	12	12	12	12	12
<b>Rated operational currents <math>I_e</math> (A)</b>					
<b>Rated voltage</b>	<b>Load duty category</b>	<b>A/B<sup>(1)</sup></b>	<b>A/B<sup>(1)</sup></b>	<b>A/B<sup>(1)</sup></b>	<b>A/B<sup>(1)</sup></b>
400 VAC	AC-21 A / AC-21 B	250/250	400/400	630/630	800/800
400 VAC	AC-22 A / AC-22 B	250/250	400/400	630/630	800/800
400 VAC	AC-23 A / AC-23 B	250/250	400/400	630/630	800/800
690 VAC <sup>(2)</sup>	AC-21 A / AC-21 B	200/200	315/400	500 /630	800/800
690 VAC <sup>(2)</sup>	AC-22 A / AC-22 B	200/200	315/400	500 /630	800/800
690 VAC <sup>(2)</sup>	AC-23 A / AC-23 B	200/200	250/315	315/400	630/630
220 VDC	DC-21 A / DC-21 B	200/200	315/315	400/630	800/800
220 VDC	DC-22 A / DC-22 B	200/200	315/315	315/630	800/800
220 VDC	DC-23 A / DC-23 B	200/200	200/315	400/630	800/800
440 VDC	DC-21 A / DC-21 B	200/200	315/315	400/630 <sup>(3)</sup>	800/800 <sup>(4)</sup>
440 VDC	DC-22 A / DC-22 B	200/200	315/315 <sup>(3)</sup>	315/630 <sup>(3)</sup>	800/800 <sup>(4)</sup>
440 VDC	DC-23 A / DC-23 B	200/200	200/315 <sup>(3)</sup>	400/630 <sup>(3)</sup>	800/800 <sup>(4)</sup>
<b>Operational power AC-23 (kW) <sup>(1)(5)</sup></b>					
400 VAC without pre-break auxiliary contact		132/132	220/220	355/355	450/450
At 690 VAC without pre-break AC		185/185	220/295	295/400	400/400
<b>Reactive power (kvar)</b>					
At 400 VAC (kvar) <sup>(5)</sup>		115	185	290	365
<b>Fuse protected short-circuit withstand with gG DIN fuses</b>					
Prospective short-circuit current (kA rms.) <sup>(6)</sup>		100	100	100	100
Associated fuse rating (A) <sup>(6)</sup>		250	400	630	800
<b>Short-circuit operation (switch only)</b>					
Rated peak withstand current (kA peak) <sup>(6)</sup>		30	45	60	80
<b>Connection</b>					
Minimum Cu cable cross-section (mm <sup>2</sup> )		95	185	2 x 150	
Minimum Cu cable cross-section (mm <sup>2</sup> )				2 x 30 x 5	2 x 60 x 5
Minimum Cu cable cross-section (mm <sup>2</sup> )		240	240	2 x 300	4 x 185
Maximum Cu busbar width (mm)		40	40	50	100
Tightening torque min (Nm)		20	20	40	20
<b>Mechanical Characteristics</b>					
Durability (number of operating cycle)		8000	8000	5000	5000
Weight of a 3-pole device (kg)		7	8	16	28
Weight of a 4-pole device (kg)		8.5	9.5	19	33

(1) Category with index A = frequently operated /  
Category with index B = infrequently operated.

(2) With terminal shrouds or terminal screen.

(3) Poles not juxtaposed.

(4) 4-pole device with 2 poles in series per polarity

(5) The power value is given for information only; the current values vary from one manufacturer to another.

(6) For a rated operational voltage  $U_e = 400$  VAC.



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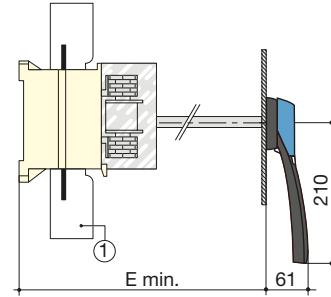
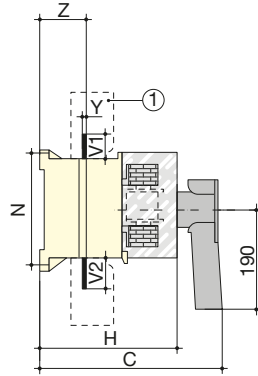
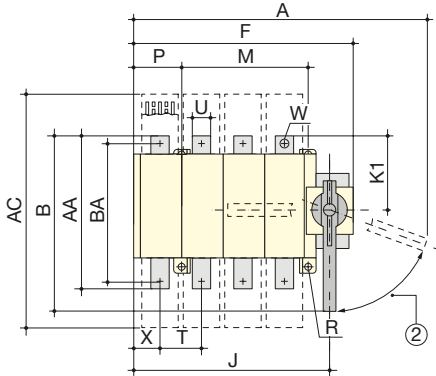
250 A to 1250 A

## Dimensions

### 250 to 630 A

Direct front operation

External front operation



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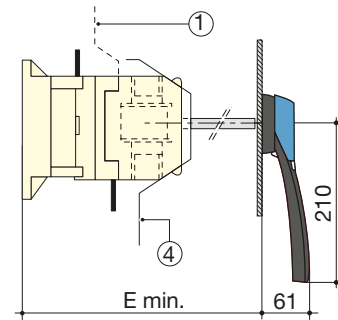
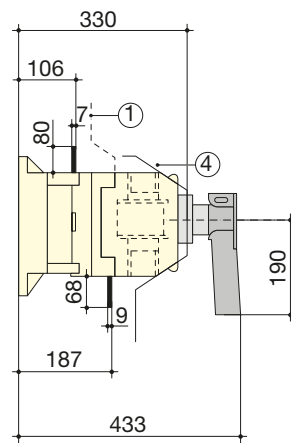
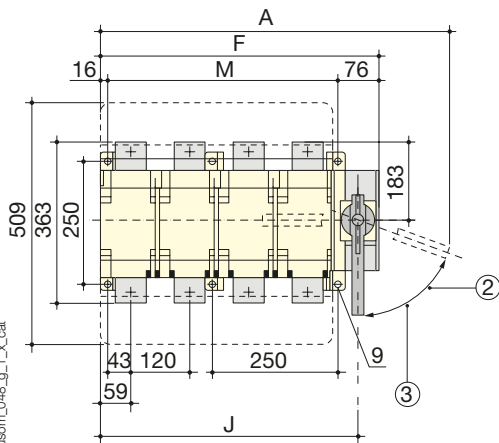
- 1. Terminal shroud.
- 2. 70° reset.

Current (A)	Overall dimensions					Terminal Shrouds AC	Body					Switch mounting					Connection											
	A 3p.	A 4p.	B	C	E min		F 3p.	F 4p.	H	J 3p.	J 4p.	K1	M	N	P 3p.	P 4p.	R	T	U	V1	V2	W	X 3p.	X 4p.	Y	Z	AA	BA
250	435	495	305	307	228	388	285	345	221	253	313	115	210	180	10	70	7	65	32	35	43	11	51	46	3	67	238	208
400	435	495	305	307	228	388	285	345	221	253	313	115	210	180	10	70	7	65	32	35	43	13	51	46	5	69	238	208
630	491	570	350	348	276	470	346	425.5	268	308	388	150	250	250	20	100	9	80	50	50	50	13	65	65	7	72	300	260

### 800 to 1250 A

Direct front operation

External front operation



- 1. Top terminals screen
- 2. 70° reset.

- 3. 65° padlock
- 4. Front protective screen.

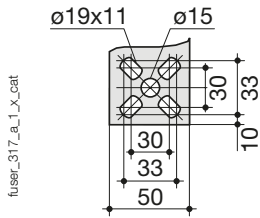
Current (A)	Overall dimensions			Body				Switch mounting	
	A 3p.	A 4p.	E min	F 3p.	F 4p.	J 3p.	J 4p.	M 3p.	M 4p.
800	582	702	416	437	557	399.5	519.5	345	465
1,250	582	702	416	437	557	399.5	519.5	345	465

A connection terminals

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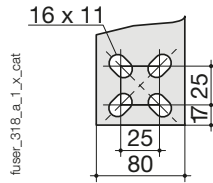
800 A

Top and bottom



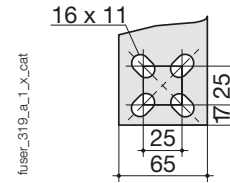
1250 A

Top



1250 A

Bottom



Dimensions for external handles

FUSOMAT

250 to 1250 A

Handle type	Front operation		Lateral operation	
	Operating direction	Door drilling	Operating direction	Door drilling
<p>Type <b>S3</b></p>				