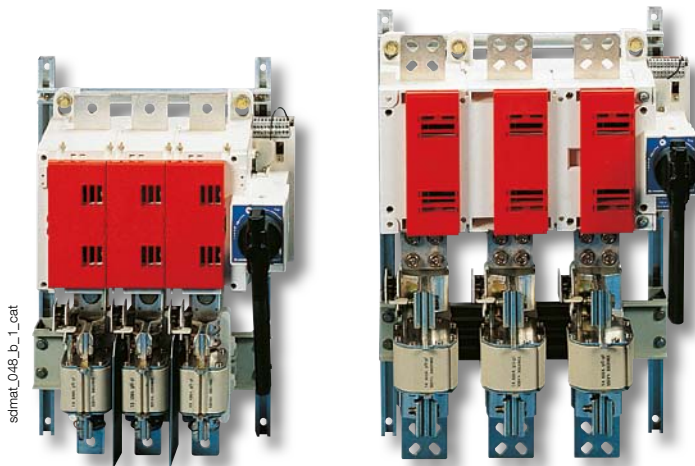




# SIDERMAT combination

Visible breaking and tripping fuse switches  
from 630 to 1800 A

Fuse protection



sdmat\_048\_b\_1\_cat

## Function

**SIDERMAT combination** are manually operated tri- or tetrapolar fuse disconnecting switches which can be triggered remotely.

They make and break under load conditions and provide safety isolation and protection against overcurrent for any low voltage electrical circuit.

## Advantages

### Tripping upon overload.

Remote breaking by voltage release device.

### High breaking capacity

Protection against overloads and short-circuits thanks to high breaking capacity fuses (100 kA rms).

They can automatically switch on a power circuit in combination with:

- fuse blown indication,
- thermal relay,
- differential relay,
- protective relays DIRIS,
- other protective devices.

### Improved safety

- Double break per phase.
- Visible break.
- Positive break indication.
- IP2X protection with terminal shrouds front panel.

## The solution for

- > Motor load break
- > Protection of industrial cabinet
- > Electrical distribution



## Strong points

- > Tripping upon overload
- > High breaking capacity
- > Improved safety

## A complete range

- > Can be combined with uR fuses for the protection of power semi-conductors. Please consult us.

## Conformity to standards

- > IEC 60947-3
- > EN 60947-3
- > BS EN 60947-3
- > NBN EN 60947-3
- > IEC 60269-1
- > IS 14947-3
- > DIN EN 60269-1
- > NF EN 60269-1
- > IEC 60269-2
- > VDE 0636-1
- > VDE 0660-107



## References

### NFC and DIN - Front operation - Switch body with a shunt trip coil - 230 VAC

Rating (A) / Fuse <sup>(4)</sup>	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	1 <sup>st</sup> position AC	Tripping AC	Terminal shrouds top	Terminal screens top	Inter phase barrier																													
630 A / 3	3 P	3520 <b>3063</b>	Black 3999 <b>6203</b> <sup>(1)</sup>	S3 type Black IP55 1431 <b>3511</b> <sup>(1)</sup> Red IP55 1432 <b>3511</b>	320 mm 1401 <b>1532</b>	1 <sup>st</sup> contact NO/NC 3999 <b>0051</b> 2 <sup>nd</sup> contact NO/NC 3999 <b>0052</b>	1 contact NO/NC 3999 <b>0031</b>	3998 <b>3063</b>	3 P 2998 <b>3120</b> <sup>(2)</sup> 4 P 2998 <b>4120</b> <sup>(2)</sup>	3 P 2998 <b>0003</b> 4 P 2998 <b>0004</b>																													
	4 P	3520 <b>6063</b>						3998 <b>4063</b>																															
800 A / 4	3 P	3520 <b>3080</b>						Black 3999 <b>6203</b> <sup>(1)</sup>			S3 type Black IP55 1431 <b>3511</b> <sup>(1)</sup> Red IP55 1432 <b>3511</b>	320 mm 1401 <b>1532</b>	1 <sup>st</sup> contact NO/NC 3999 <b>0051</b> 2 <sup>nd</sup> contact NO/NC 3999 <b>0052</b>	1 contact NO/NC 3999 <b>0031</b>	3 P 2998 <b>3120</b> <sup>(2)</sup> 4 P 2998 <b>4120</b> <sup>(2)</sup>	3 P 2998 <b>0003</b> 4 P 2998 <b>0004</b>																							
	4 P	3520 <b>6080</b>															3 P 2998 <b>3180</b> <sup>(2)</sup> included 2998 <b>4180</b> <sup>(2)</sup>																						
1250 A / 4	3 P	3520 <b>3120</b>																Black 3999 <b>6203</b> <sup>(1)</sup>	S3 type Black IP55 1431 <b>3511</b> <sup>(1)</sup> Red IP55 1432 <b>3511</b>	320 mm 1401 <b>1532</b>	1 <sup>st</sup> contact NO/NC 3999 <b>0051</b> 2 <sup>nd</sup> contact NO/NC 3999 <b>0052</b>	1 contact NO/NC 3999 <b>0031</b>	3 P 2998 <b>3120</b> <sup>(2)</sup> 4 P 2998 <b>4120</b> <sup>(2)</sup>	3 P 2998 <b>0003</b> 4 P 2998 <b>0004</b>															
	4 P	3520 <b>6120</b>																																					
1600 A / 2 x 4*	3 P	3520 <b>3160</b>																							Black 3999 <b>6203</b> <sup>(1)</sup>	S3 type Black IP55 1431 <b>3511</b> <sup>(1)</sup> Red IP55 1432 <b>3511</b>	320 mm 1401 <b>1532</b>	1 <sup>st</sup> contact NO/NC 3999 <b>0051</b> 2 <sup>nd</sup> contact NO/NC 3999 <b>0052</b>	1 contact NO/NC 3999 <b>0031</b>	3 P 2998 <b>3120</b> <sup>(2)</sup> 4 P 2998 <b>4120</b> <sup>(2)</sup>	3 P 2998 <b>0003</b> 4 P 2998 <b>0004</b>								
	3 P + NC	3520 <b>4160</b>																																					
	4 P	3520 <b>6160</b>																																					
1800 A / 2 x 4*	3 P	3520 <b>3180</b> <sup>(3)</sup>																														Black 3999 <b>6203</b> <sup>(1)</sup>	S3 type Black IP55 1431 <b>3511</b> <sup>(1)</sup> Red IP55 1432 <b>3511</b>	320 mm 1401 <b>1532</b>	1 <sup>st</sup> contact NO/NC 3999 <b>0051</b> 2 <sup>nd</sup> contact NO/NC 3999 <b>0052</b>	1 contact NO/NC 3999 <b>0031</b>	3 P 2998 <b>3120</b> <sup>(2)</sup> 4 P 2998 <b>4120</b> <sup>(2)</sup>	3 P 2998 <b>0003</b> 4 P 2998 <b>0004</b>	
	3 P + NC	3520 <b>4180</b> <sup>(3)</sup>																																					3 P 2998 <b>3180</b> <sup>(2)</sup> included 2998 <b>4180</b> <sup>(2)</sup>
	4 P	3520 <b>6180</b> <sup>(3)</sup>																																					

(1) Standard.

(2) Bottom terminals protection screen as standard.

(3) Only one of the two T4 fuses should be equipped with striker.

(4) For the fuses: see "NFC-DIN industrial fuselinks 0.16 to 1250 A" page 344.

\* Two size 4 DIN fuses in parallel per pole.

# SIDERMAT combination

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from 630 to 1800 A

## Accessories

### Direct front operation handle

Rating (A)	Handle colour	Reference
630 ... 1800	Black	3999 <b>6203</b>
630 ... 1800	Red	consult us



access\_156\_a\_2\_cat

### External front operation handle

Rating (A)	Handle colour	External IP	Reference
630 ... 1800	Black	IP55	1431 <b>3511</b>
630 ... 1800	Red	IP55	1432 <b>3511</b>



access\_151\_a\_2\_cat

access\_166\_a\_2\_cat

S3 type handle

### Alternative S-type handle cover colours

#### Use

For single lever S3 type handles.

Other colours: consult us.

Colour	To be ordered by multiple	Reference
Light grey	50	1401 <b>0001</b>
Dark grey	50	1401 <b>0011</b>



access\_198\_a\_2\_cat

### Shaft for external handle

#### Use

Standard lengths:

- 200 mm,

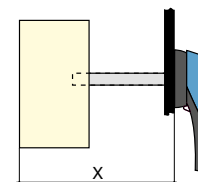
- 320 mm.

Other lengths: consult us.

Rating (A)	Dimension X (mm)	Shaft length (mm)	Reference
630 ... 800	350 ... 450	200	1401 <b>1520</b>
630 ... 800	350 ... 570	320	1401 <b>1532</b>
1250 ... 1800	370 ... 570	320	1401 <b>1532</b>



access\_144\_b\_1\_cat



access\_202\_a\_1\_X\_cat

### Current-reducing resistor for undervoltage trip coil

#### Use

Reduces, by limiting the current, the effects on the undervoltage coils used in continuous processes or processes exposed to high ambient temperatures.

Voltage	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>

## Alternative tripping coils

Coils Characteristics: see "SIDERMAT" page 304.

Shunt trip coil		
Voltage	Replacement tripping coil Reference	Original coil <sup>(1)</sup> Reference
24 VAC	3990 1024	3991 1024
48 VAC	3990 1048	3991 1048
110 VAC	3990 1110	3991 1110
230 VAC	3990 1220	included
400 VAC	3990 1380	3991 1380
12 VDC	3990 2012	3991 2012
24 VDC	3990 2024	3991 2024
48 VDC	3990 2048	3991 2048
110 / 200 VDC	3990 2220	3991 2220

Undervoltage trip coil		
Voltage	Replacement tripping coil Reference	Original coil <sup>(1)</sup> Reference
24 VAC	3990 3024	3991 3024
48 VAC	3990 3048	3991 3048
110 VAC	3990 3110	3991 3110
230 VAC	3990 3220	3991 3220
400 VAC	3990 3380	3991 3380
12 VDC	3990 4012	3991 4012
24 VDC	3990 4024	3991 4024
48 VDC	3990 4048	3991 4048
110 VDC	3990 4110	3991 4110
220 VDC	3990 4220	3991 4220

(1) To be ordered at same time as switch (factory fitted).

Shunt trip coil.



access\_049\_a\_1\_cat

Undervoltage trip coil



access\_050\_a\_1\_cat

### Use

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

Note: the shunt trip coil must not be supplied for more than 5 s. A 230 VAC shunt trip coil is fitted to the standard switch body.

To modify this coil, the reference opposite must be added to the switch reference (use "original coil" reference).

### Examples for ordering

- Combined SIDERMAT with shunt trip coil 230 VAC - 1 reference:  
Combined SIDERMAT 630 A, 3 pole, front operation: 3520 3063.
- Combined SIDERMAT fitted with a non standard coil - 2 references:  
Combined SIDERMAT 630 A, 3 pole, front operation fitted with a 110 VAC undervoltage trip coil: 3520 3063 + 3991 3110.

## Auxiliary contacts

### References

NO/NC position contact		
Rating (A)	Position AC	Reference
630 ... 1800	1 <sup>st</sup>	3999 0051
630 ... 1800	2 <sup>nd</sup>	3999 0052

NO/NC low level position contact		
Rating (A)	Position AC	Reference
630 ... 1800	1 <sup>st</sup>	3999 0111
630 ... 1800	2 <sup>nd</sup>	3999 0112

NO/NC contact, signalling coil tripping		
Rating (A)	Position AC	Reference
630 ... 1800	1	3999 0031

### Characteristics

NO/NC position contact					
Rating (A)	Current nominal (A)	Operating current I <sub>o</sub> (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
630 ... 1800	16	12	8	14	6

NO/NC contact, signalling coil tripping					
Rating (A)	Current nominal (A)	Operating current I <sub>o</sub> (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
630 ... 1800	16	12	8	12	2



access\_048\_a\_1\_cat

### Use

Pre-break and signalling of positions 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.

### Characteristics

NO/NC auxiliary contact: IP2.

### Electrical characteristics

30 000 operations.

# SIDERMAT combination

Visible breaking and tripping fuse switches

from 630 to 1800 A

## Accessories (continued)

### Fuse blown indication

#### Use

For DIN fuse cartridges with striker.

#### Electrical principle

A NO/ NC auxiliary contacts detects that the fuse has blown.

#### Connection to the control circuit

By 6.35 mm fast-on terminal.

#### Electrical characteristics

30 000 operations.

#### NO/NC changeover contact

Rating (A)	No. of poles	Position AC	Reference
630 ... 1800	3/4 P	1 <sup>st</sup>	included

#### Characteristics

Rating (A)	Nominal current (A)	Operating current I <sub>o</sub> (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
630 ... 1800	16	12	8	12	2

### Terminal shrouds

#### Use

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

#### Advantages

Perforations allowing remote thermographic inspection without removal.

Rating (A)	No. of poles	Position	Reference
630	3 P	top	3998 3063
630	4 P	top	3998 4063



access\_212\_a\_2\_cat

### Terminal screens

#### Use

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

Rating (A)	No. of poles	Position	Reference
800 ... 1600	3 P	top	2998 3120
800 ... 1600	4 P	top	2998 4120
1800	3 P	top	2998 3180
1800	4 P	top	2998 4180
800 ... 1800	3/4 P	bottom	included

### Inter phase barrier

#### Use

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

Rating (A)	No. of poles	Reference
1250 ... 1800	3 P	2998 0003
1250 ... 1800	4 P	2998 0004



access\_036\_a\_1\_cat

### Handle key interlocking accessories

#### Use

Locking in position 0 of the front operation handle:

- using a padlock (not supplied) and the factory integrated padlocking function of the handle.
- using RONIS 1104 A lock (key BC 3318) to be mounted directly on the padlockable handle,
- locking using RONIS EL11AP lock (not supplied).

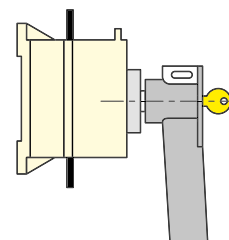
#### Locking using RONIS EL 1104 A lock (supplied)

Rating (A)	Operation	Reference
630 ... 1800	front direct	3999 8104

#### Locking using RONIS EL11AP lock (not supplied)

Rating (A)	Operation	Reference
630 ... 1250	front direct	3999 7007
1600 ... 1800	front direct	3999 6117
630 ... 1800	external front	1499 7701

Lock RONIS 1104A



access\_010\_b\_1\_x\_cat

### Other specific accessories

- Customised protection screens (for specific dimensions or high ambient temperatures).
- Connection accessories.
- Mounting plates for standard systems.
- Special construction available for specific environments.

## Characteristics according to IEC 60947-3

### 630 to 1800 A

Thermal current $I_{th}$ (40°C)	630 A	800 A	1250 A	1600 A	1800 A
Fuse size	3	4	4	2 x 4	2 x 4
Rated insulation voltage $U_i$ (V)	1000	1000	1000	1000	1000
Rated impulse withstand voltage $U_{imp}$ (kV)	12	12	12	12	12

#### Rated operational currents $I_e$ (A)

Rated voltage	Utilisation category	A/B <sup>(1)</sup>	A/B <sup>(1)</sup>	A/B <sup>(1)</sup>	A/B <sup>(1)</sup>	A/B <sup>(1)</sup>
400 VAC	AC-22 A / AC-22 B	630/630	800/800	1250/1250	1600/1600	1600/1800
400 VAC	AC-23 A / AC-23 B	630/630	630/630	1250/1250	1600/1600	1600/1600
690 VAC <sup>(2)</sup>	AC-21 A / AC-21 B	630/630	800/800	1250/1250	1600/1600	
690 VAC <sup>(2)</sup>	AC-22 A / AC-22 B	500/630	630/800	1000/1000	1250/1250	
690 VAC <sup>(2)</sup>	AC-23 A / AC-23 B	400/500	500/500	800/800	1000/1000	
220 VDC	DC-21 A / DC-21 B	630/630	800/800	1250/1250	1600/1600	
220 VDC	DC-22 A / DC-22 B	630/630	800/800	1250/1250	1600/1600	
220 VDC	DC-23 A / DC-23 B	500/630	630/800	1250/1250	1250/1250	
440 VDC	DC-20 A / DC-20 B	630/630	800/800	1250/1250	1600/1600	
440 VDC	DC-21 A / DC-21 B	630/630	800/800	1250/1250	1600/1600	
440 VDC	DC-22 A / DC-22 B	630/630 <sup>(3)</sup>	800/800 <sup>(3)</sup>	1250/1250 <sup>(4)</sup>	1600/1600 <sup>(4)</sup>	
440 VDC	DC-23 A / DC-23 B	500/630 <sup>(3)</sup>	630/800 <sup>(3)</sup>	1250/1250 <sup>(4)</sup>	1250/1250 <sup>(4)</sup>	

#### Motor power output (kW)

At 400 VAC without pre-break in AC-23 <sup>(1)(5)</sup>	355/355	355/355	710/710	900/900	900/900
At 690 VAC without pre-break in AC-23 <sup>(1)(5)</sup>	400/475	475/475	750/750	900/900	
At 400 VAC without pre-break in AC <sup>(1)(5)</sup>	355/355	450/450	710/710	900/900	900/900
At 690 VAC without pre-break in AC <sup>(1)(5)</sup>	475/600	600/750	900/900	1100/1100	

#### Reactive power (kvar)

At 400 VAC <sup>(5)</sup>	290	365	575		
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#### Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) <sup>(6)</sup>	100	100	100	120	120
Associated fuse rating (A) <sup>(6)</sup>	630	800	1250	2 x 800	2 x 900

#### Short-circuit capacity

Rated peak withstand current (kA peak) <sup>(6)</sup>	55	80	100	120	120
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#### Connection

Minimum Cu cable section (mm <sup>2</sup> )	2 x 150	2 x 185			4 x 240
Minimum Cu busbar section (mm <sup>2</sup> )	2 x 30 x 5	2 x 40 x 5	2 x 60 x 5	2 x 80 x 5	
Maximum Cu cable section (mm <sup>2</sup> )	2 x 300	2 x 300	4 x 185	6 x 240	8 x 240
Maximum Cu busbar width (mm)	50	63	100	100	100
Tightening torque min (Nm)		20	20	40	

#### Mechanical characteristics

Durability (number of operating cycles)	5000	5000	5000	3000	3000
Weight of 3 P switch (kg)	20	25	27	54	59
Weight of 4 P switch (kg)	24	30	32	70	75

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) Poles cannot be juxtaposed.

(4) 4-pole device with 2 pole in series by 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  $U_n = 400$  VAC.

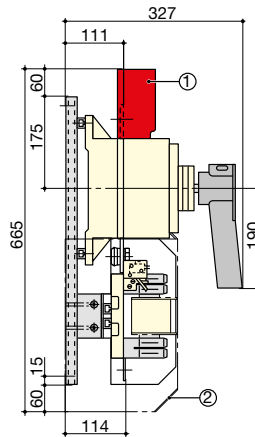
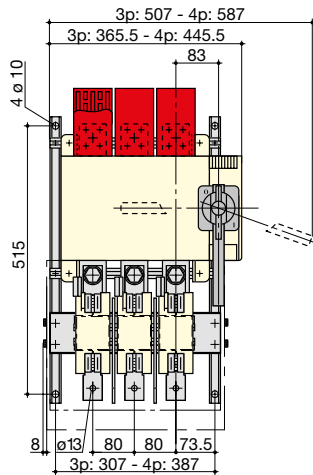
# SIDERMAT combination

Visible breaking and tripping fuse switches  
from 630 to 1800 A

## Dimensions

### SIDERMAT combination 630 A

Direct front operation

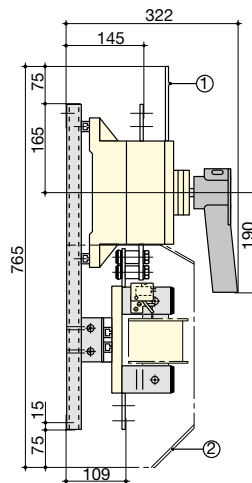
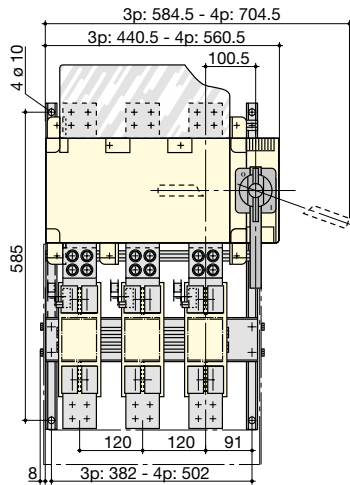


1. Terminal shrouds top.
2. Terminal screens bottom

sidmat\_006\_c\_1\_x\_cat

### SIDERMAT combination 800 to 1250 A

Direct front operation

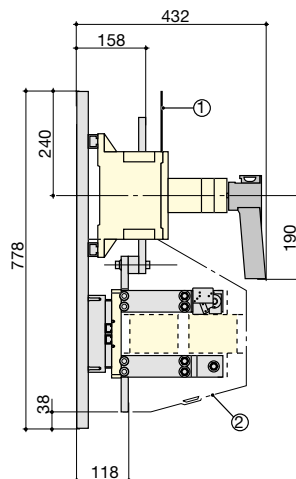
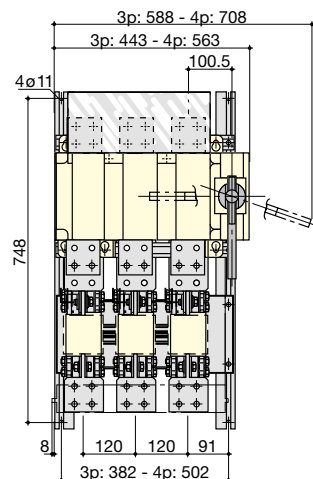


1. Terminal screens top
2. Terminal screens bottom

sidmat\_005\_a\_1\_x\_cat

### SIDERMAT combination 1600 A

Direct front operation

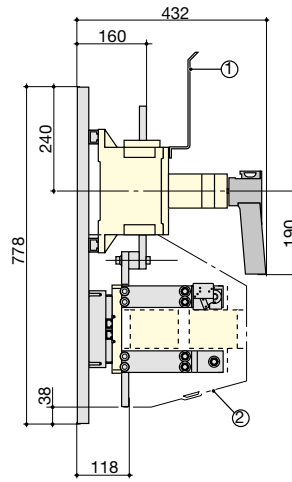
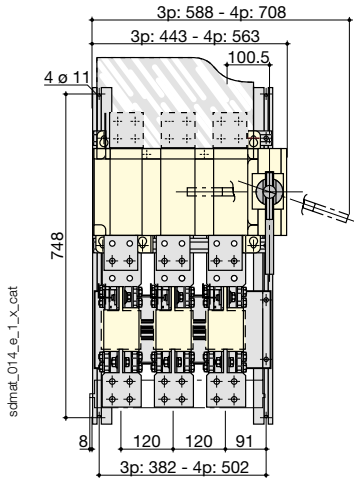


1. Terminal screens top
2. Terminal screens bottom

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**SIDERMAT combination 1800 A**

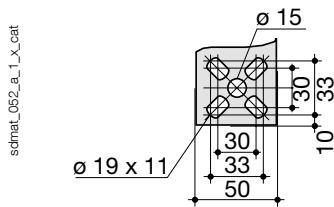
Direct front operation



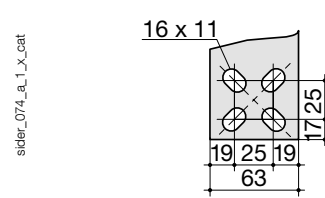
1. Terminal screens top
2. Terminal screens bottom

**Connection terminals**

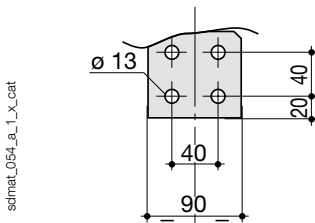
**SIDERMAT combination - 630 A**



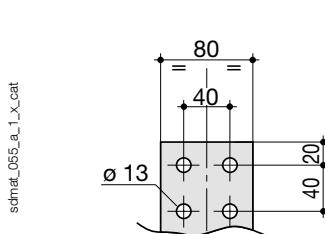
**SIDERMAT combination 800 to 1250 A**



**SIDERMAT combination 1600 to 1800 A - bottom**



**SIDERMAT combination 1600 A - top**



**SIDERMAT combination 1800 A - top**

