

Compact NS equipped with terminal shields.

## Insulation of live parts

### Terminal shields

Terminal shields are sealable insulating accessories used for protection against direct contact with power circuits (degree of protection IP40, IK07). They are supplied with sealing accessories.

#### Terminal-shield selection

- Fixed circuit breaker, front connection - long terminal shields
- Fixed circuit breaker, rear connection - short terminal shields.
- For voltages  $\geq 500$  V, terminal shields are mandatory.
- For voltages  $> 600$  V, special connection kit with terminal shields and insulating screens
- For Compact NS400 to 630 with spreaders, special terminal shields for spreaders
- For withdrawable circuit breaker (plug-in and chassis type), short terminal shields on the device are mandatory. Terminal shields on the base are possible.

Long terminal shields for plug-in bases are used to:

- Protect against direct contact with power circuits (degree of protection IP40, IK07)
- increase insulation between phases.

Insulating accessories for plug-in bases include:

- An adapter offering the same connection possibilities as the circuit breaker
- Long terminal shields for the plug-in base.

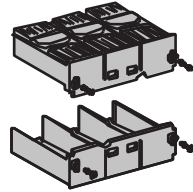
### Interphase barriers

Safety accessories for maximum insulation at the power-connection points:

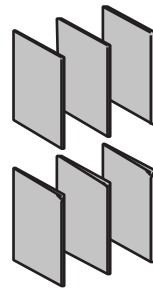
- They clip easily onto the circuit breaker
- Not compatible with terminal shields
- Special version for plug-in bases.

### Rear insulating screens

Safety accessories for insulation between connections and the backplate. Compatible with terminal shields or interphase barriers.



Terminal shields



Interphase barriers



Rear insulating screens

## Installation in switchboards

### Safety clearances and minimum distances

#### Compact NS 80 to 630

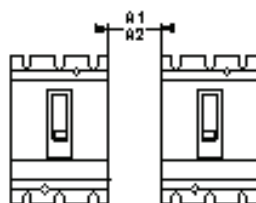
When installing a circuit breaker, minimum distances (safety clearances) must be maintained between the device and panels, bars and other protection devices installed nearby. These distances, which depend on the ultimate breaking capacity, are defined by tests carried out in accordance with standard IEC 60947-2.

If installation conformity is not checked by type tests, it is also necessary to:

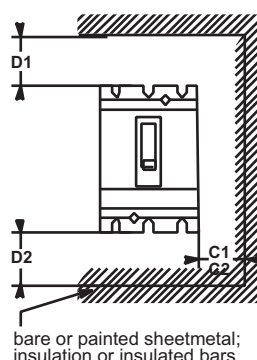
- Use insulated bars for circuit-breaker connections
- Block off the busbars using insulating screens.

For Compact NS80 to 630 devices, terminal shields, interphase barriers and the insulation kit are recommended and may be mandatory depending on the utilisation voltage and the type of installation (fixed, withdrawable). (See page 142.)

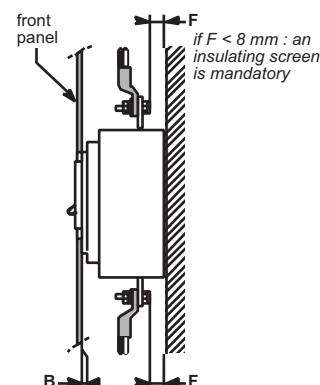
#### Minimal distance between two adjacent circuit breakers



Minimal distance between  
the circuit breaker and top,  
bottom or side panels



Minimal distance between  
the circuit breaker  
and front or rear panels



Dimensions (mm)		Insulation, insulated bars or painted sheetmetal			Bare sheetmetal					
Compact circuit breaker		C1	D1	D2	C2	D1	D2	A1 (2)	A2 (3)	B
NS80H-MA	U ≤ 440 V	0	30	30	5	35	35	0	10	0
	U < 600 V	0	30	30	10 (1)	35	35	0	20	0
NSC100N	U ≥ 600 V	0	30	30	20 (1)	35	35	0	40	0
	U ≤ 440 V	0	30	30	5	35	35	0	10	0
	U < 600 V	0	30	30	10 (1)	35	35	0	20	0
NS100-250	U ≥ 600 V	0	30	30	20 (1)	35	35	0	40	0
	U ≤ 440 V	0	30	30	5	60	60	0	10	0
NS400-630	U < 600 V	0	30	30	10 (1)	60	60	0	20	0
	U ≥ 600 V	0	30	30	20 (1)	100	100	0	40	0

(1) Distance must be doubled with interphase barriers.

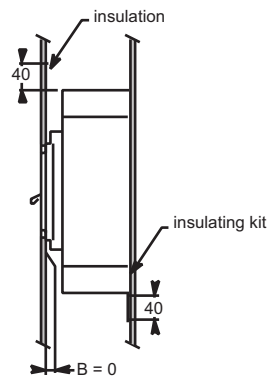
(2) For Compact NS with long or short terminal shields.

(3) For Compact NS without terminal shields.

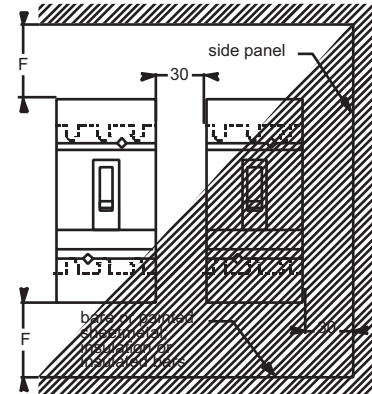
The mandatory distances when installing Compact NS circuit breakers are calculated from the device case, not taking into account the terminal shields or the interphase barriers.

### Fixed Compact NS 400 1000 V AC, front connection

Power supply from the top or bottom. Connection by cables or busbars.



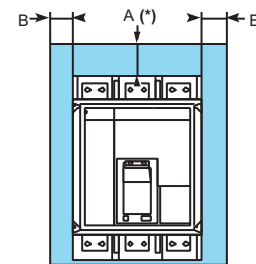
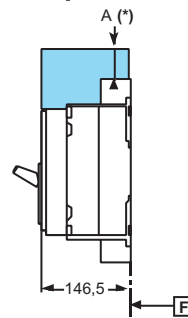
Insulating kit is standard.



Connection using cables with lugs or busbars,  $F = 100$ .  
Connection using bare cables,  $F = 150$ .

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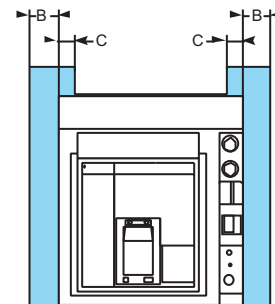
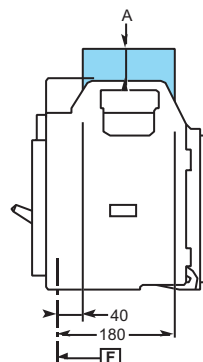
### Compact NS 630b to 3200 (fixed devices)



An overhead clearance of 50 mm is required to remove the arc chutes.

	Insulated parts	Metal parts	Live parts
<b>NS630b to 1600</b>			
A	0	0	180
B	0	0	60
<b>NS1600b to 2500</b>			
A	0	30	180
B	0	0	60
<b>NS3200</b>			
A	0	30	180
B	0	30	60

### Compact NS 630b to 1600 (withdrawable devices)



	Insulated parts	Metal parts	Live parts
A	0	0	30
B	10	10	60
C	0	0	90

F Datum

## Power connections for Compact NS100 to 630<sup>(cont.)</sup>

### Insulation of live parts

#### Fixed Compact NS, front connections

	NS100/250N/H/L	NS400/630N/H	NS400/630L
U < 500 V	Interphase barriers or long terminal shields recommended. Insulated bars are mandatory.		Interphase barriers or long terminal shields recommended. Insulated bars are mandatory.
500 V ≤ U ≤ 600 V	Interphase barriers or long terminal shields are mandatory. Insulated bars are mandatory.	Interphase barriers or long terminal shields are mandatory. Insulated bars are mandatory.	Interphase barriers or long terminal shields are mandatory. Insulated bars are mandatory.
U > 600 V	Insulation kit and insulated bars are mandatory.	Insulation kit and insulated bars are mandatory.	Insulation kit and insulated bars are mandatory.

*The insulation kit is not compatible with:*

- separate spreaders for Compact NS100 to 250. The one-piece spreader must be used
- separate spreaders (70 mm) for Compact NS400 and 630. For the 52.5 mm spreaders, there is a specific insulation kit.

#### Fixed Compact NS, rear connections

	NS100/250N/H/L	NS400/630N/H	NS400/630L
All voltage levels	Short terminal shields recommended.	Short terminal shields recommended.	Short terminal shields recommended.

#### Withdrawable Compact NS, front and rear connections

	NS100/250N/H/L	NS400/630N/H	NS400/630L
All voltage levels	Short terminal shields are mandatory. Insulated bars are mandatory.	Short terminal shields are mandatory. Insulated bars are mandatory for U ≥ 500 V.	Short terminal shields are mandatory. Insulated bars are mandatory.

*Use of an insulating screen (supplied with the plug-in base) is mandatory.*