

General rules

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:

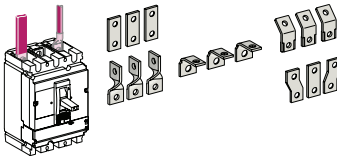
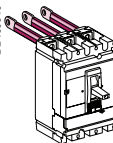
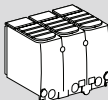
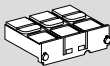
- use insulated bars for circuit-breaker connections
- segregate the busbars using insulating screens.

For CVS100 to 630 devices, terminal shields and interphase barriers are recommended and may be mandatory depending on the operating voltage of the device and type of installation (fixed, withdrawable, etc.).

Power connections

The table below indicates the rules to be respected for CVS100 to 630 devices to ensure insulation of live parts for fixed devices.

CVS100 to 630: rules to be respected to ensure insulation of live parts

Type of connection	Fixed, front connection			Fixed, rear connection	
	DB400039 			DB400040 	
Possible, recommended or mandatory accessories:	No insulating accessory	Interphase barriers	Long terminal shields ⁽¹⁾	Short terminal shields	
With:		DB115059 	DB115060 	DB115061 	
operating voltage	type of conductor				
≤ 440 V	Insulated bars	Possible	Possible	Possible	Recommended
					
Extension terminals Cables + crimp lugs	  	No	Mandatory (supplied)	Possible (instead of ph. barriers)	Recommended
Bare cables + connectors	   	Possible for CVS100 to 250	Possible for CVS100 to 250	Possible for CVS100 to 250	Recommended
		No	Mandatory (supplied)	Possible (instead of ph. barriers)	

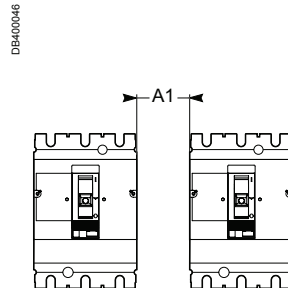
⁽¹⁾ Long terminal shields provide a degree of protection of IP40 (ingress) and IK07 (mechanical impact).

Installation in switchboards

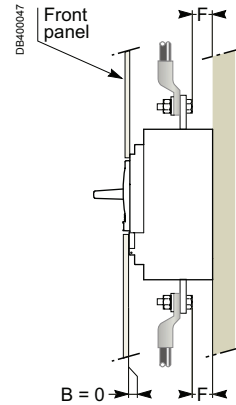
Installation example

Safety clearance

Minimum distance between two adjacent circuit breakers



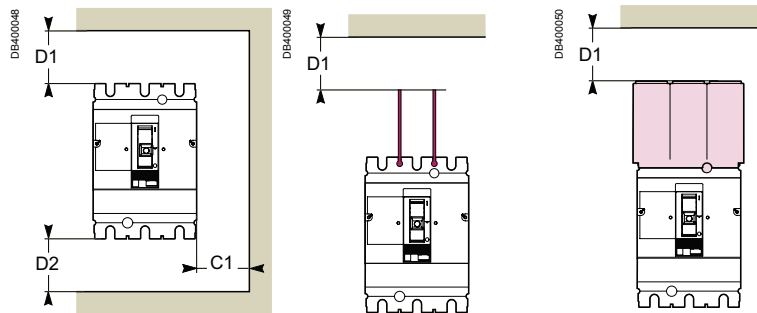
Minimum distance between circuit breaker and front or rear panels



Bare or painted sheet metal

Note: if $F < 8$ mm: an insulating screen or long terminal shield is mandatory.

Minimum distance between circuit breaker and top, bottom or side panels

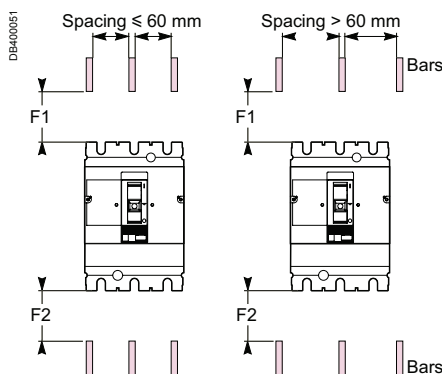


Devices without accessories.

Devices with interphase barriers or long terminal shields.

Minimum safety clearances for CVS100 to 630

Dimensions (mm) Compact circuit breaker	Insulation, insulated bars or painted sheet metal			Bare sheet metal			
	C1	D1	D2	C1	D1	D2	A1
CVS100-250 $U \leq 440$ V	0	30	30	5	35	35	0
CVS400-630 $U \leq 440$ V	0	30	30	5	60	60	0



Live busbars.

Clearances with respect to live bare busbars

Minimum clearances for CVS100 to 630

Operating voltage	Clearances with respect to live bare busbars			
	spacing ≤ 60 mm		spacing > 60 mm	
	F1	F2	F1	F2
$U < 440$ V	350	350	80	80

These clearances can be reduced for special installations as long as the configuration is checked by tests.