

# Compact C1251N DC

## General presentation

### Catalogue numbers



C1521N fixed version.



C1521N withdrawable version.

### Presentation

The Compact C1251N DC provides short circuit protection on networks supplied with direct current:

- rated current from 630 to 1250 A
- operating voltage from 125 to 750 V DC

2 types of instantaneous magnetic protection are available:

- P21 adjustable magnetic trip unit from 1600 to 3200 A
- P41 adjustable magnetic trip unit from 3200 to 6400 A.

### Accessories

A full range of accessories and electrical auxiliaries identical to the standard C801/1001/1251N/H/L range:

- direct and extended rotary handle
- motor mechanism
- withdrawable chassis
- undervoltage release (MN)
- shunt trip (MX)
- auxiliaries contact (CA/OF)
- fault indication (SD) and electrical fault indication (SDE).

### Standards

The C1251N DC complies with the international standards IEC 60947-1 and IEC 60947-2.

### Maximum safety

As standard:

- positive contact indication.
- high impulse withstand voltage 8 kV.
- disconnecting function according to IEC 60947-2.

The front face cover bears the "circuit breaker disconnector" symbol  $\text{---}\times\text{---}$

- double case insulation of front face (class II device) allowing class II installations with breaker control from outside
- auxiliaries compartment fully insulated from power supply (integral partitioning).

### Catalogue numbers

C1251N DC 3P fixed front-connected basic breaker <sup>(1)</sup>		Cat. numbers
Magnetic trip unit	P21	46034
	P41	46036
Fixed rear connected		Identical to standard C1251
Withdrawable (on chassis)		
Accessories		
Electrical auxiliaries		

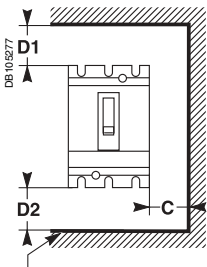
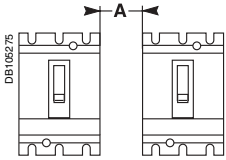
**(1)** 4 pole version: please consult us.

Compact circuit breaker				C1251N DC
Number of poles				3 <sup>(1)</sup>
<b>Electrical characteristics as per IEC 60947-1/ 60947-2 and EN 60947-1 / 60947-2</b>				
Rated current	In	(A)	at 40 °C	1250/1000 <sup>(2)</sup>
			at 50 °C	1100/880 <sup>(2)</sup>
			at 60 °C	950/760 <sup>(2)</sup>
Rated insulation voltage	Ui	(V)		750
Rated impulse withstand voltage	Uimp	(kV peak)		8
Rated operational voltage	Ue	(V DC)		750
Ultimate breaking capacity (L/R = 5 ms and L/R = 15 ms)	Icu	(kA rms)	V DC	
			125 V (1P) <sup>(3)</sup>	50
			250 V (2P) <sup>(3)</sup>	50
			500 V (3P) <sup>(3)</sup>	50
			750 V (3P) <sup>(3)</sup>	25
Service breaking capacity	Ics	% Icu		50 %
Rated making capacity	Icm	% Icu		100 %
Utilisation category				A
Breaking time		(ms)		< 15 ms
Suitability for isolation				■
Pollution degree (as per IEC 60664-1)				III
<b>Protection against overcurrents</b>				
Trip units	P21 built in			■ <sup>(4)</sup>
	P41 built in			■ <sup>(4)</sup>
Protection	Overloads			■
	Short-circuits			■
<b>Durability</b>				
(O/F cycles)	Mechanical			3000
	Electrical		250 V In	500
			500 V In	500
			750 V In	500
<b>Indication and control auxiliaries</b>				
Auxiliary contacts	CA/OF, CAM			■
Alarm switch	SD			■
Voltage release	MX shunt release			■
	MN undervoltage release			■
Motor mechanism	T, TS			■
<b>Installation and connections</b>				
Fixed	Front connection			■
	Rear connection			■
Withdrawable (chassis)	Front connection			■
	Rear connection			■
<b>Adaptable accessories</b>				
Terminal shields				■
Connection accessories				■
Padlocking device				■
Locking devices				■
Rotary handles				■
<b>Dimensions and weight</b>				
Dimensions H x W x D (mm)	Fixed		3P	374 x 210 x 172
Weight (kg)	Fixed		3P	13
<b>(1) 4 pole version: please consult us.</b>				
<b>(2) Withdrawable version.</b>				
<b>(3) Number of poles taking part in current interruption.</b>				
Example. The NS100N circuit breaker exists in the following versions:				
- 1 pole with an Icu of 50 kA, for systems ≤ 250 V				
- 3 poles with an Icu of 25 kA, for systems ≤ 750 V.				
<b>(4)</b>				
Magnetic setting	I <sub>rm</sub> ±20 %			
P21	1600/3200 A			
P41	3200/6400 A			

# Compact C1251N DC Safety perimeters Connection on direct current network

## Safety perimeters

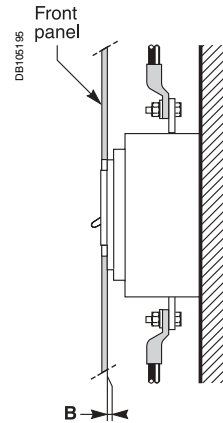
Minimum distance between 2 breakers side by side  
A = 0



Bare or painted sheetmetal;  
insulation or insulated bars

Minimum distance between breaker and front door  
B = 0

Distances D1 and D'1 are obtained from tests defined in IEC 60947-2. They are related to the ultimate breaking capacities, terminal shields are compulsory. They are given with respect to the circuit breaker case.



Minimum distance between breaker and bare side plate C (C = 0 for insulated or painted side plate)

Dimensions (mm)

	C	D1	D2	D'1	D'2
$U \leq 500 \text{ V}$	10	200	180	70	70
$U > 500 \text{ V}$	10	300	250	70	70

## Connection on direct current network

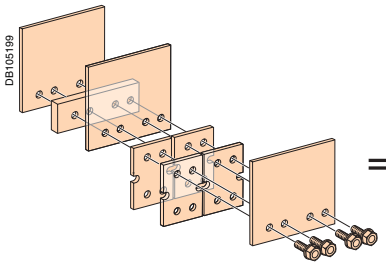
### Type of distribution system

Type	Earthed		Isolated
Source	One polarity (negative here) connected to earth (or exposed conductive parts)		Mid-point connected to earth
Protected polarities	1 (disconnection of 1P)	2 (disconnection of 2P)	2
Diagrams (and types of faults)			

### Selection of circuit breaker and pole connection

Compact NS $24 \text{ V} \leq U_n \leq 125 \text{ V}$			
	DB105000	DB105000	DB105001
$125 \text{ V} < U_n \leq 250 \text{ V}$			
	DB105006	DB105006	DB105006
$250 \text{ V} < U_n \leq 500 \text{ V}$			
	DB105008	DB105009	DB105007
$500 \text{ V} < U_n \leq 750 \text{ V}$			
	DB105008	DB105009	DB105007

# Compact C1251N DC Connection



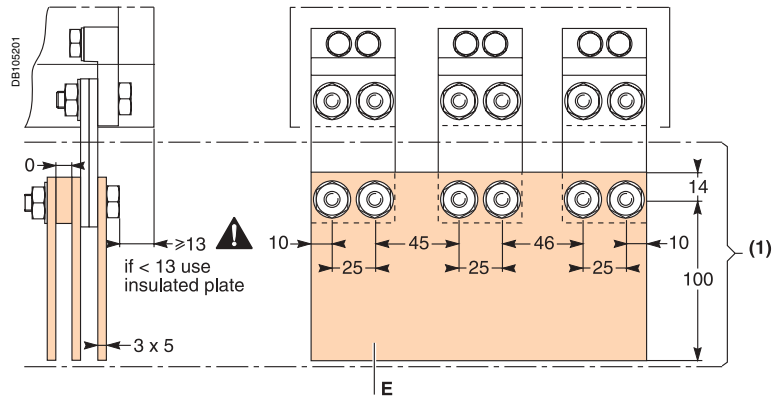
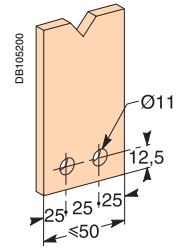
## Connection

### Fixed front connected

Direct to breaker terminal.

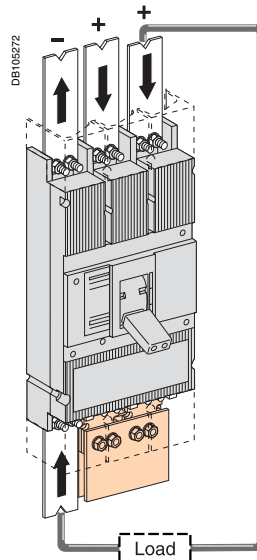
### Maximum capacity for direct connection to breaker terminal:

- 2 bars 50 x 10 mm
- 3 bars 50 x 6.3 mm
- 4 bars 50 x 5 mm.

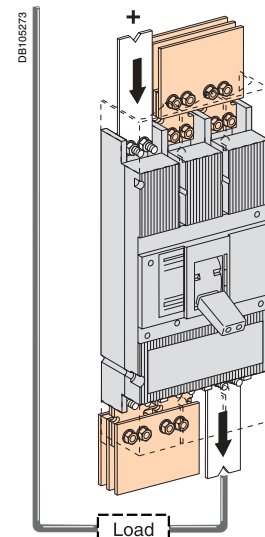


(1) E not supplied.

## Mounting examples



3-phase - 2 poles in series  
for  $125 < U_n \leq 250$  V.



3-phase - 3 poles in series  
for  $250 < U_n \leq 750$  V.

Long terminal shields are to be used for  $U > 250$  V.

## Fixed rear connected

Connection identical to standard C1251N.

Short terminal shields are to be used (series connection same as FFC).

## Withdrawable rear connected

Connection identical to standard C1251N (series connection same as FFC).

# Notes

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**Schneider Electric Industries SAS**

89, boulevard Franklin Roosevelt  
F - 92500 Rueil-Malmaison (France)  
Tel : +33 (0)1 41 29 85 00

<http://www.schneider-electric.com>

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