

# AC power Surge Protector Panels

## CBC - CBB - CBA



The surge protector panels are intended to protect 230/400V or 120/208V (Single or 3-Phase) electrical installations from transient overvoltages generated by lightning or by the electrical environment.

These panels are based on the use of DIN rail AC power surge protectors (DS series) : these protections combine performance (very high discharge capacity, fast response time, common and differential mode protection) and safety (electrical and thermal disconnection, indication and remote signalling).

Installation of these surge protector panels do not require any external devices, these ones being already equipped with protective fuses in compliance with standards

3 types of panels are available :

### **CBC series :**

«Single stage» surge protection panel, they are factory hardwired, including protective fuses. Their implementations are optimized and surge protection efficiency enhanced.

### **CBB series :**

«Double stage» surge protection panel with coordination inductors to decrease dramatically the residual voltage at the output of the protection. RFI filtering feature integrated.

### **CBA series :**

«Surge + isolation» protection panel designed for maximum efficiency ( $U_p < 0,5$  kV) and with galvanic isolation from the upstream network (by high isolation transformer). RFI Filtering feature integrated

### **Versions**

Many versions are available to fit different needs :

- $I_{max}$  : 70 or 40 kA (Type 2 surge protector)
- $I_{limp}$  : 15 kA (Type 1 surge protector)
- Single and 3-Phase network
- Network voltage : 230/400V or 120/208V
- Signalling and remote signaling of disconnection
- Fuses included
- RFI filtering (CBB and CBA)

### **Options for specific versions :**

- Breaker
- Resetting breaker system
- Lightning counter
- AC network monitoring
- Data or telecom line protection

### **Safety**

According to standards, the surge protection panels are equipped with devices to monitor their end of life :

- Protective fuses for short-circuit currents
- Thermal disconnectors included in the surge protectors to prevent from thermal runaway.

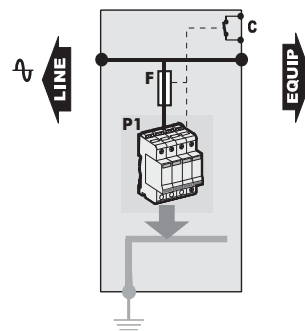
The status of these safety devices are monitored by indicators and auxiliary dry contacts : in case of one or more failure, these mechanisms will operate and any equipment connected will be activated (buzzer, external indicators, modem transmission...).

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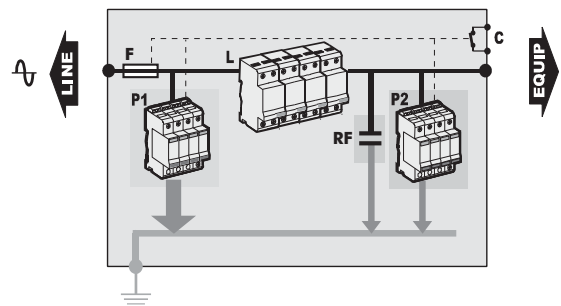
- Single and 3-Phase surge protector panels
- Type 1 and Type 2
- Common mode and differential mode
- «Coordination» and «Isolation» versions
- Disconnection indicator and remote signalling of thermal and electrical disconnection
- Individual module for each phase
- Pluggable module (Type 2)
- IEC 61643-1 and EN 61643-11 compliance
- Specific versions on request

## CBC version

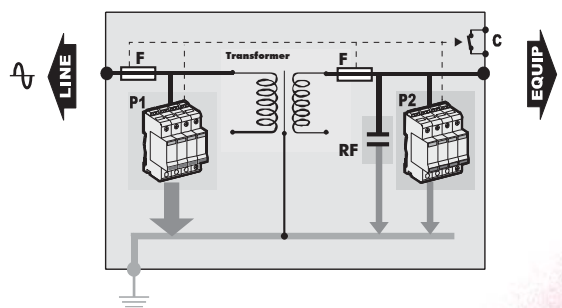


P1 : Primary surge protector  
 P2 : Secondary surge protector  
 L : Coordination inductor  
 F : Fuses  
 C : Remote signaling contact  
 RF : RFI filtering

## CBB version



## CBA version



# AC power Surge Protector Panels

## CBC - CBB - CBA

### Characteristics

CITEL part number	CBC			CBB			CBA
	Single stage			Coordination + Filtering			Coordination + Isolation
Configuration	Type 1	Type 2	Type 2	Type 1	Type 2	Type 2	Type 2
Type of protection	Type 1	Type 2	Type 2	Type 1	Type 2	Type 2	Type 2
Network voltage*	230/400V	230/400V	230/400V	230/400V	230/400V	230/400V	230/400V
Max. operating voltage $U_c$	400 Vac	400 Vac	400 Vac	400 Vac	400 Vac	400 Vac	400 Vac
Temporary overvoltage withstand $U_T$	400 Vac	400 Vac	400 Vac	400 Vac	400 Vac	400 Vac	400 Vac
Single phase network (TT, TN)	CBC152-230	CBC72-230	CBC42-230	CBB152-xx-230	CBB72-xx-230	CBB42-xx-230	CBA42-xx-KVA-230
3-Phase network (TNC, IT)	CBC153-400	CBC73-400	CBC43-400	CBB153-xx-400	CBB73-xx-400	CBB43-xx-400	-
3-Phase + neutral network (TT, TNS)	CBC154-230	CBC74-230	CBC44-230	CBB154-xx-230	CBB74-xx-230	CBB44-xx-230	CBA154-xx-KVA-230
Common and differential mode protection	yes	yes	yes	yes	yes	yes	yes
RFI filtering	no	no	no	yes	yes	yes	yes
Max. line current $I_L$	-	-	-	35 or 63 A	35 or 63 A	35 or 63 A	4 at 44 A (single)/1,5 à 15 A (tri)
Maximum Power	-	-	-	8 or 15 kVA (single phase)/24 or 44 kVA (tri)			1 - 3 - 5 - 8 - 10 kVA
Operating current $I_c$ <i>Leakage current at <math>U_c</math></i>	none	none	none	< 1 mA	< 1 mA	< 1 mA	< 1 mA
Follow current $I_f$	none	none	none	none	none	none	none
Nominal discharge current $I_n$ <i>15 x 8/20 <math>\mu</math>s impulses</i>	20 kA	30 kA	15 kA	20 kA	30 kA	15 kA	15 kA
Maximum discharge current $I_{max}$ <i>Max. withstand 8/20 <math>\mu</math>s</i>	-	70 kA	40 kA	-	70 kA	40 kA	40 kA
Max. lightning current $I_{imp}$ <i>Max. withstand. 10/350 <math>\mu</math>s</i>	15 kA	-	-	15 kA	-	-	15 kA
Protection level (at $I_n$ ) $U_p$	1,5 kV	2 kV	1,5 kV	1 kV	1,3 kV	1,1 kV	0,5 kV
Admissible short-circuit current	25000 A	25000 A	25000 A	25000 A	25000 A	25000 A	25000 A
<b>Safety</b>							
Thermal disconnectors	internal to each surge protector			internal to each surge protector			internal to each surge protectors
Electrical disconnectors	internal to each panel			internal to each panel			internal to each panel
Installation ground fault breaker	Type «S» or delayed (if required)			Type «S» or delayed (if required)			Type «S» or delayed (if required)
<b>Mechanical characteristics</b>							
Dimensions	See table «Part number»			See table «Part number»			See table «Part number»
Weight	See table «Part number»			See table «Part number»			See table «Part number»
Protection class	IP65			IP65			IP45
Housing material	ABS UL94-V0			ABS UL94-V0			Metal
Operating temperature	-40/+85 °C			-40/+85 °C			-40/+85 °C
Mounting	Wall mounted by screws (not supplied)			Wall mounted by screws (not supplied)			Wall mounted by screws or set down
Wiring access	Transparency hinged front door			Transparency hinged front door			Transparency hinged front door
Connection	by screws : 2,5-25 mm <sup>2</sup> and 6-35 mm <sup>2</sup> (CBC15x)			by screws : 2,5-25 mm <sup>2</sup> and 6-35 mm <sup>2</sup> (CBC15x)			by screw terminals : 6-25 mm <sup>2</sup>
Disconnection indication	Mechanical indicators on surge protectors and fuses			Mechanical indicators on surge protectors and fuses			Mechanical indicators on surge protectors and fuses
Remote signaling of disconnection	Auxiliary contacts on surge protectors and fuses			Auxiliary contacts on surge protectors and fuses			Auxiliary contacts on surge protectors and fuses
<b>Standards compliance</b>							
IEC 61643-1	International	Low Voltage SPD		Low Voltage SPD			Low Voltage SPD
NF EN 61643-11	France	Parafoudre Basse Tension		Parafoudre Basse Tension			Parafoudre Basse Tension
EN 61643-11	Europe	Low Voltage SPD		Low Voltage SPD			Low Voltage SPD
UL1449 ed.2	USA	Low Voltage TVSS		Low Voltage TVSS			Low Voltage TVSS

\*) Each part number is available in 120/208 V network

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## CBC - CBB - CBA

### Part number

CBC series						
Network 230V Single phase	Network 120V single phase	Discharge current by pole	Max. line current	Max. Power	Dimension (l x h x p - in mm)	Weight
CBC152-230	CBC152-120	$I_{imp} = 15 \text{ kA (10/350}\mu\text{s)}$	-	-	215 x 210 x 100	1.7 kg
CBC72-230	CBC72-120	$I_{max} = 70 \text{ kA}$	-	-		1.5 kg
CBC42-230	CBC42-120	$I_{max} = 40 \text{ kA}$	-	-		1.4 kg
Network 230/400V 3-Phase	Network 120/208V 3-Phase					
CBC153-400	CBC153-120	$I_{imp} = 15 \text{ kA (10/350}\mu\text{s)}$	-	-	410 x 285 x 140	3.8 kg
CBC73-400	CBC73-120	$I_{max} = 70 \text{ kA}$	-	-	298 x 260 x 140	2.6 kg
CBC43-400	CBC43-120	$I_{max} = 40 \text{ kA}$	-	-		2.4 kg
Network 230/400V 3-Phase+neutral	Network 120/208V 3-Phase+neutral					
CBC154-230	CBC154-120	$I_{imp} = 15 \text{ kA (10/350}\mu\text{s)}$	-	-	410 x 285 x 140	4.2 kg
CBC74-230	CBC74-120	$I_{max} = 70 \text{ kA}$	-	-	298 x 260 x 140	3 kg
CBC44-230	CBC44-120	$I_{max} = 40 \text{ kA}$	-	-		2.8 kg

CBB series						
Network 230V single phase	Network 120V single phase	Discharge current by pole	Max. line current	Power max.	Dimension (l x h x p - in mm)	Weight
CBB152-35-230	CBB152-35-120	$I_{imp} = 15 \text{ kA (10/350}\mu\text{s)}$	35 A	8 kVA	410 x 285 x 140	4.1 kg
CBB152-63-230	CBB152-63-120	$I_{imp} = 15 \text{ kA (10/350}\mu\text{s)}$	63 A	14.5 kVA		4.4 kg
CBB72-35-230	CBB72-35-120	$I_{max} = 70 \text{ kA}$	35 A	8 kVA		4 kg
CBB72-63-230	CBB72-63-120	$I_{max} = 70 \text{ kA}$	63 A	14.5 kVA		4.3 kg
CBB42-35-230	CBB42-35-120	$I_{max} = 40 \text{ kA}$	35 A	8 kVA		3.7 kg
CBB42-63-230	CBB42-63-120	$I_{max} = 40 \text{ kA}$	63 A	14.5 kVA		4 kg
Network 230/400V 3-Phase+neutral	Network 120/208V 3-Phase+neutral					
CBB154-35-230	CBB154-35-120	$I_{imp} = 15 \text{ kA (10/350}\mu\text{s)}$	35 A	24 kVA	410 x 463 x 140	7.5 kg
CBB14-63-230	CBB154-63-120	$I_{imp} = 15 \text{ kA (10/350}\mu\text{s)}$	63 A	44 kVA		8.1 kg
CBB74-35-230	CBB74-35-120	$I_{max} = 70 \text{ kA}$	35 A	24 kVA		7.5 kg
CBB74-63-230	CBB74-63-120	$I_{max} = 70 \text{ kA}$	63 A	44 kVA		7.9 kg
CBB44-35-230	CBB44-35-120	$I_{max} = 40 \text{ kA}$	35 A	24 kVA		6.9 kg
CBB44-63-230	CBB44-63-120	$I_{max} = 40 \text{ kA}$	63 A	44 kVA		7.5 kg

CBA series						
Network 230V single phase	Network 120V single phase	Discharge current by pole	Max. line current	Power max.	Dimension (l x h x p - in mm)	Weight
CBA42-1KVA-230	CBA42-1KVA-120	$I_{max} = 40 \text{ kA}$	5 A	1 kVA	600 x 400 x 250	34 kg
CBA42-3KVA-230	CBA42-3KVA-120	$I_{max} = 40 \text{ kA}$	13 A	3 kVA		56 kg
CBA42-5KVA-230	CBA42-5KVA-120	$I_{max} = 40 \text{ kA}$	22 A	5 kVA		75 kg
CBA42-8KVA-230	CBA42-8KVA-120	$I_{max} = 40 \text{ kA}$	35 A	8 kVA	600 x 400 x 400	76 kg
CBA42-10KVA-230	CBA42-10KVA-120	$I_{max} = 40 \text{ kA}$	44 A	10 kVA		80 kg
Network 230/400V 3-Phase+neutral	Network 120/208V 3-Phase+neutral					
CBA44-1KVA-230	CBA44-1KVA-120	$I_{max} = 40 \text{ kA}$	1.5 A	1 kVA	700 x 500 x 250	35 kg
CBA44-3KVA-230	CBA44-3KVA-120	$I_{max} = 40 \text{ kA}$	4.5 A	3 kVA		62 kg
CBA44-5KVA-230	CBA44-5KVA-120	$I_{max} = 40 \text{ kA}$	7.5 A	5 kVA		76 kg
CBA44-8KVA-230	CBA44-8KVA-120	$I_{max} = 40 \text{ kA}$	11.5 A	8 kVA		82 kg
CBA44-10KVA-230	CBA44-10KVA-120	$I_{max} = 40 \text{ kA}$	14.5 A	10 kVA		87 kg