

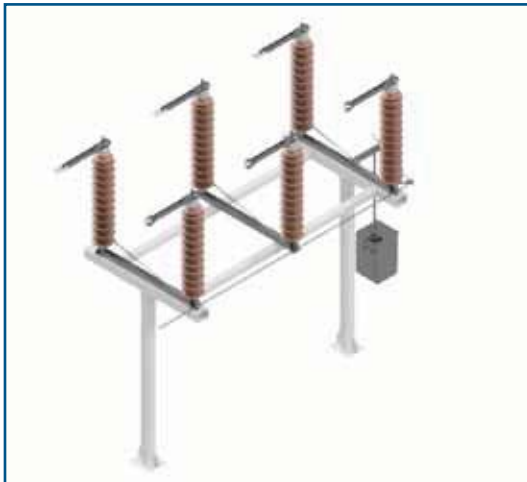
CBD 72.5-550 kV Centre-break disconnecter

HV Switching



We know how

Our range of centre-break disconnectors is designed to ensure the best performances and reliability, which are the result of our 70-year old experience. Over 100,000 disconnectors installed in more than 100 countries worldwide are the guarantee of best-buys.



The CBD centre-break disconnector

The CBD disconnector is composed of three poles operated simultaneously either by a single operating mechanism and mechanical linkages between the poles, or by one single operating mechanism for each pole.

Its versatility and weatherability are considered as a reference: the CBD has been installed in virtually any possible layout throughout the world and under the harshest environmental conditions: from -50°C to $+50^{\circ}\text{C}$, in icy or desert countries and even in the most seismic regions of the planet.

The simplicity of the design of the centre-break disconnector makes it the most commonly used in the world. From the use of only two insulators for each pole it is an economic solution for general purpose disconnecting function.

The horizontal motion and the design of contacts allow the actuation torque to be as low as possible for a smooth and fast operation.

The insulating columns used for the CBD comply with the IEC or the ANSI Standards. Special heights and creepage distances are also available upon request.

To adapt to various layouts of substations, the poles can be erected traditionally (horizontal) or wall-mounted, and even upside down.

Like all our models, the CBD complies with the latest international standards (IEC, ANSI), but can also be customised according to customers' particular specifications.

Earthing switch

Integrated earthing blades are available for mounting on each or both sides of the pole, with the same short-time current withstand capability.

The earthing switch is actuated by the same types of operating mechanisms as the disconnector, either manually or electrically, either single- or 3-pole. It can be electrically and/or mechanically interlocked with the main switch.

Construction features

The arms of each pole are made of drawn aluminium profiles, with silver plated copper contacts bolted at the central ends (number of fingers and silver thickness are according to rated current).

The rotary contacts are bolted on the top of the insulators. Depending on the voltage and current, they are either built around fingers, loaded by stainless steel springs or made with flexible aluminium straps.

The springs ensuring contact pressure, as well as the hardware of live parts, are made of stainless steel.

The HV terminals are made of copper or aluminium.

Where necessary, suitable shields protect the main circuit from the corona effect.

The base frame and the rotary support are made of hot-dip galvanized steel profiles.

The bearings are sealed and guaranteed to ensure maintenance-free operation for the whole life of the equipment.

The whole design and manufacturing process is ruled by ISO 9001 certified procedures, to guarantee a perfect reproducibility of performances from type-testing to the series production.

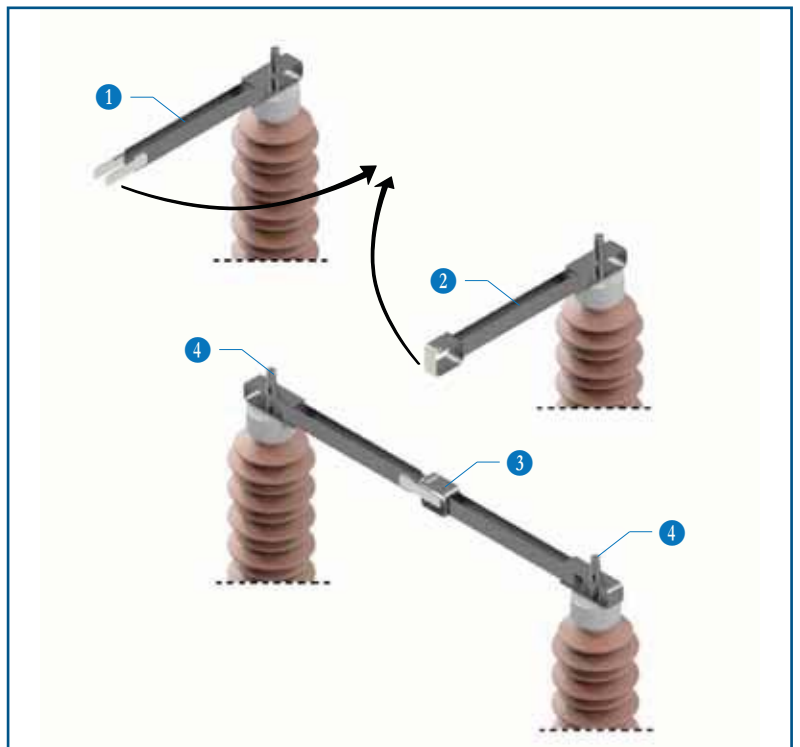


Operating principle

The base frame supports two rotating insulators which support and operate the arms.

The live part is very simple in its design and motion. From the open position, the arms ① and ② rotate together, synchronised by their linkage bar to join in the middle of the pole, and to close the main contact ③.

The HV terminals ④ are as per the next page figure. Customised terminals are also available upon request.



Ratings and dimensions

The values in the table refer to IEC standards, unless explicit reference to ANSI is made; for missing ANSI ratings, refer to C37.32

Rated voltage	U_r (kV)	72.5	123	145	170	245		300	362	420	550
Rated power-frequency withstand voltage	TE U_d (kV)	140	230	275	325	395	460	395	450	520	620
	AID U_d (kV)	160	265	315	375	460	530	435	520	610	800
Rated lightning impulse withstand voltage	TE U_p (kV _p)	325 (IEC) 350 (ANSI)	550 (IEC) 550 (ANSI)	650 (IEC) 650 (ANSI)	750 (IEC) 750 (ANSI)	950 (IEC) 900 (ANSI)	1050 (IEC) 1050 (ANSI)	1050 (IEC) -	1175 (IEC) -	1425 (IEC) 1300 (ANSI)	1550 (IEC) 1800 (ANSI)
	AID U_p (kV _p)	375	630	750	860	1050	1200	1050 (+170)	1175 (+205)	1425 (+240)	1550 (+315)
Rated switching impulse withstand voltage	TE U_s (kV _p)	-	-	-	-	-	-	850	950	1050	1175
	AID U_s (kV _p)	-	-	-	-	-	-	700 (+245)	800 (+295)	900 (+345)	900 (+450)

TE: To Earth
AID: Across the Isolating Distance

Rated continuous current	I_r (A)	up to 5000 IEC / ANSI (depending on rated voltage)
Rated short-time withstand current	I_k (kA)	up to 63 / 3s (depending on rated current)
Rated peak withstand current	I_p (kA _p)	up to 160 (depending on rated current)

Dimensions (mm)	A		900	1400	1600	1800	2400	2400	2900	3200	4000	4500
B	IEC		770	1220	1500	1700	2100	2300	2300	2650	3350	3650
	ANSI		762	1143	1372	1575	2032	2337	-	-	3099	3861
C	IEC		940	1390	1670	1870	2370	2570	2570	2920	3630	3930
	ANSI		932	1313	1542	1745	2302	2607	-	-	3379	4141
D			515	775	875	975	1335	1335	1585	1735	2200	2450
E			150	150	150	150	270	270	270	270	270	270
F			-	-	-	-	270	270	270	270	270	270
G			1050	1550	1750	1950	2200	2200	2700	3470	4270	4770
H			4 \varnothing 18	4 \varnothing 18	4 \varnothing 18	4 \varnothing 18	8 \varnothing 18	8 \varnothing 18	8 \varnothing 18	8 \varnothing 18	8 \varnothing 18	8 \varnothing 18

Reliability and maintenance

Due to lifetime greased or self-lubricated hinges and to self-wiping contacts, the maintenance of CBD metallic parts is ensured by their own motion.

The use of corrosion-free or treated materials for all components ensures an exceptional reliability over many years of service.

The mechanical endurance performance exceeds the IEC standard requirements.

Optional devices

Upon request, the disconnector can be equipped with a bus-transfer current switching device compliant with IEC 62271-102 (Annex B).

The integrated earthing switch can also be fitted with optional induced current switching devices compliant with IEC 62271-102 (Annex C).

For operation under severe ice conditions (up to 20 mm), ice shields are available for protection of the equipment (where needed).

