

CZ SWITCH DISCONNECTORS

Superior Performance in tough conditions

L&T Electrical & Automation (E&A) is a market leader for electrical distribution, monitoring and control solutions in the low voltage category.

Switchgear Factory, Ahmednaga,

Switchgear Factory, Navi Mumbar

Switchgear Factory, Vadodara

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Popular among customers as L&T Switchgear, E&A offers a wide range of low adn medium voltage switchgear, motor starters, electrical systems, industiral automation building electrical solutions, energy mangement solutions, electrical modernization solutions and meterign solutions. It products and solutions cater to key sectors of economy like industries, utilities, infrastructure, building and agriculture.

E&A's manufacturing operations at Navi Mumbai, Ahmednagar, Vadodara, Coimbatore and Mysuru in India adhere to global practices of excellence and reveive support from well-equiped in-house design and development centres as well as tooling facilities that contribute to precision in manufacturing.

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CZ Switch Disconnectors

E&A now offers wide range of Switch-Disconnectors suitable for multitude of applications like power distribution, isolation in solar power plants, local ON/OFF control for machines & motor, to name a few.

Available in both open and ready to use SS enclosure versions, the CZ Switch Disconnectors are easy to install, operate and inspect. Armored with safety features like terminal shrouds, phase barriers & door interlock, the CZ Switch Disconnectors are designed to battle against accidental faults and inadvertent operations. Robust construction allows to withstand higher fault currents without any deterioration.

Designed For Indian Ambient Conditions

CZ Switch Disconnectors are rugged and suitable to carry rated current at high temperatures experienced in Indian Sub-Continent. Also, the terminals are designed to accommodate Aluminum cables/bus bars.

Safety Guaranteed

There is no benefit of the doubt allowed when it comes to safety. Terminal shrouds protect against accidental human contact with the live terminals, phase barriers stand in line of any phase to phase flashovers and high ground clearance eliminates any possibility of grounding live cables/links.

Different Operational Voltages For Different Needs

CZ family of Switch Disconnectors have dedicated range for different voltages (upto 800V AC, 1000V DC, 1500V DC). While power distribution normally requires 415V ac rated SDs, other applications like metal furnaces require 690V ac SDs. Also, 800 Vac and 1500 Vdc SDs are common requirement in Solar applications.

Diverse Needs, Varied Options

Both direct and extended handle versions are available to meet diverse application needs. The extended or panel mounted handle is IP54 rated for extreme external environment. Also, the length of the extended shaft can be adjusted to align with different panel sizes.

Contact System & Mechanism

CZ SDs have modular construction with separate cassettes for mechanism and contact system. Contact system cassette (pole assembly) consists of rotor assembly housing moving contacts, terminals and arc-chutes. The contact system is double break knife type. Mechanism is quick make-quick break and multi -cams type for smooth and efficient torque transmission. Moreover, the contacts are visible through transparent window section to know actual status of contact system

For A Sustainable Future

All the materials used for components, welding and plating on metallic components are RoHS compliant. Material used for packaging is recyclable.

Accessories a) Auxiliary Contacts

Upto 2nos. 1NO + 1NC can be fitted for ON/OFF status indication. The auxiliary contacts module is front mounted, plug-in type and can be fitted at the site. Auxiliary contacts actuation is from the main mechanism shaft. Addition of these contacts does not alter over-all dimensions of the switch.

b) Castell Key Lock

The CZ SDs can be interlocked with the help of Castell locks.

Standards & Approvals

Switch-Disconnector range comply with following standards

• IEC 60947-1, EN 60947-1, IS/IEC 60947-1

Low-voltage switchgear and controlgear, Part 1: General Rules

• IEC 60947-3, EN 60947-3, IS/IEC 60947-3

Low-voltage switchgear and controlgear, Part 3: Switches, disconnectors, switch-disconnectors and fuse combination units

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NABL accreditation is a formal recognition of the technical competence of testing, calibration or medical laboratory for a specific task following ISO/IEC 17025:2005 Standard.

Accredited laboratories have the responsibility of satisfying the criteria of laboratory accreditation at all times, which are verified during Surveillance and Reassessment visits by NABL.

Further the accredited laboratories should prove their technical competence by satisfactory participation in recognized Proficiency Testing Programmes.L&T's Switchgear Testing Lab is NABL accredited subject to continued satisfactory compliance to above standard & additional requirements of NABL. Switch Disconnector range is tested in L&T's NABL accredited Switchgear Testing Lab.

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CE Marking

A CE marking is a European marking of conformity that indicates a product complies with the essential requirements of the applicable European laws or directives with respect to safety, health and environment and consumer protection. Generally, this conformity to the applicable directives is done through self-declaration and is required on products in the countries of the European Economic Area (EEA) to facilitate trade among the member countries. The manufacturer or their authorized representative established in the EEA is responsible for affixing the CE marking to their product. The CE marking provides a means for a manufacturer to demonstrate that a product complies with a common set of laws required by all countries in the EEA to allow free movement of trade within the EEA countries.

L&T's Switch-Disconnectorrange Comfirm to the low Voltage directive 73/23/EEC as amended by directive 93/68/EEC, provided it is used in the application for which it is made and is installed and maintained in accordance with professional practices with relevant installation standards and operating instructions.

Product Range

Product Range and Versions	Voltage	No. of poles	Handle Type	Mechanism/ Handle Position
	800 Vac	2P	Extended	Front Operated, Side
	800 Vac		Direct	Front Operated, Side
CZ Switch Disconnector	800 Vac	3P	Extended	Front Operated, Side
	800 Vac	4P	Direct	Front Operated, Center
	800 Vac	4P	Extended	Front Operated, Center

Universal Mounting

Sr. No.	Handle (OFF) Position	Operating Quadrant (hand)	Switch Orentation	Door Cut-out	Shaft Position
1	ON U U U U U U U U U U U U U U U U U U U		C C C	\circ	
2			0 0 0	\circ	
3	ON OF		9 -3 9 -3	\circ \circ \circ \circ \circ \circ	
4	S O U HO		ຍ ຍ ຍ	\circ \circ \circ \circ \circ	









- 1. Phase Barrier (Standard accessory)
- 2. Terminal shroud (Standard accessory)
- 3. Auxiliary Contact (Optional accessory)
- 4. Front cover
- 5. Extended shaft
- 6. Extended Handle
- 7. Direct Handle
- 8. Mounting bracket
- 9. Terminals
- 10. Shaft locking arrangement
- 11. Detailed view of shaft locking arrangement

Technical Specification for AC Switch Disconnectors

			125A	160A
Model			CZ-1	CZ-1
Compliance to Standards				
No. of Poles		2,3,4	2,3,4	
Conventional enclosed	40°C	А	125	160
thermal current (Ithe)	50°C	А	125	160
Pollution Degree			3	3
Rated Operational Voltage (Ue, Max)		V	800	800
Rated Impulse withstand voltage (Uimp)		kV	12	12
Rated Insulation voltage (Ui)		V	1250	1250
Rated Frequency		Hz		
Rated Operational Current (Ie)	AC-23A at 690Vac	А	125	160
Rated Operational Current/Poles in	220Vdc	А	125/1	160/1
Series; DC 21B	440Vdc	А	125/2	160/2
	1 Sec	kA	8	8
Rated Short Time Withstand Current (ICW, rms)	0.15 sec	kA	15	15
	0.25 Sec	kA	15	15
Rated Short Circuit Making Capacity (ICM, Peak)		kA	30	30
Rated Conditional Short-Circuit Current (Iq, Peak)		kA	100	100
Rated Breaking Capacity	AC-23A at 690 Vac	kA	1.0	1.3
Dated Operational Dower AC 224	At 415V	kW	75	90
Rated Operational Power, AC-23A	At 690V	kW	110	160
Power Loss/Pole		W	1.8	2.9
Operational Performance	Electrical	Nos.	2000	2000
capability	Mechanical	Nos.	20000	20000
Operating Torque		N-m	9	9
Maximum	Lug Size	mm2	2 X 185	2 X 185
Termination Capacity Link Size		mm2	2 X 35 X 10	2 X 35 X 10
Terminal Bolt size		M10	M10	
Terminal Tightening Torque		N-m	20	20
Weight	4P	kg	2.4	2.4

200A	250A	315A	315A	400A	630A
CZ-1	CZ-1	CZ-1	CZ-2	CZ-2	CZ-2
l	IEC 60947-3, IS/IEC 60	947-3, EN 60947-3			
2,3,4	2,3,4	2,3,4	2,3,4	2,3,4	2,3,4
200	250	315	315	400	630
200	250	315	315	400	630
3	3	3	3	3	3
800	800	800	800	800	800
12	12	12	12	12	12
1250	1250	1250	1250	1250	1250
	50/6	50			
200	250	315	315	400	630
200/1	250/1	315/1	315/1	400/1	630/1
200/2	250/2	315/2	315/2	315/2	630/2
8	8	10	16	16	20
15	15	15	31	31	38
15	15	15	24	24	36
30	30	30	45	45	45
100	100	100	100	100	100
1.6	2.0	2.5	2.5	3.2	5.0
110	132	160	160	200	355
180	200	250	250	355	600
4.6	7.1	11.3	7.5	12.2	23.8
2000	2000	2000	2000	2000	2000
20000	20000	20000	20000	20000	20000
9	9	9	18	18	20
2 X 185	2 X 185	2 X 240	2 X 300	2 X 300	2 X 300
2 X 35 X 10	2 X 35 X 10	2 X 35 X 10	2 X 50 X12	2 X 50 X12	2 X 50 X12
M10	M10	M12	M12	M12	M12
20	20	20	27	27	27
2.4	2.4	2.4	4.6	4.6	5.1

Ordering Information

Version	Frame Size	Current Rating(A)	Voltage	No. of poles	Handle type	Mechanism Position	CAT no.
	1	125A	800Vac	4P	Р	Front, Center	CK90769 OOOO
	1	160A	800Vac	4P	Р	Front, Center	СК90770 ОООО
	1	200A	800Vac	4P	Р	Front, Center	СК90771 ОООО
CZ SD-	1	250A	800Vac	4P	Р	Front, Center	CK90772 0000
Open Execution	1	315A	800Vac	4P	Р	Front, Center	CK90773 OOOO
SD	2	315A	800Vac	4P	Р	Front, Center	CK90857 0000
	2	400A	800Vac	4P	Р	Front, Center	CK90858 OOOO
	2	630A	800Vac	4P	Р	Front, Center	CK90859 OOOO
	1	125A	800Vac	4P	Р	Front, Center	CK908190000
	1	160A	800Vac	4P	Р	Front, Center	CK908200000
	1	200A	800Vac	4P	Р	Front, Center	CK908210000
	1	250A	800Vac	4P	Р	Front, Center	CK908220000
CZ SD- SS	1	315A	800Vac	4P	Р	Front, Center	CK908230000
enclosure	2	315A	800Vac	4P	Р	Front, Center	CK908780000
	2	400A	800Vac	4P	Р	Front, Center	CK908790000
	2	630A	800Vac	4P	Р	Front, Center	CK908800000
			800Vac	2P	Р	Front, Side	
			800Vac	3P	Р	Front, Side	
CZ	1 & 2	125A to 630A	800Vac	3P	D	Front, Side	*
			800Vac	4P	D	Front, Side	
CZ Auxiliary Contact Kit (1 C/O contact)	1 & 2	125A to 630A	-	-	-	-	CK908050000

P-Extended handle suitable for panel door mounting D-Direct handle suitable for direct mounting on the product

Notes:

* Please contact our nearest branch office for further details
 Separate offerings for Solar applications (800Vac and 1000Vdc/1500Vdc) are also available.

Overall Dimensions









Rating(A)	No. of poles	А	В	с	D	E	Hardware suitable for termination
	2P	137	161	25	69	144	
125-250	ЗP	137	161	25	118	193	M10
	4P	137	161	25	138	242	
	2P	150	180	35	69	144	
315	ЗP	150	180	35	118	193	M12
	4P	150	180	35	138	242	

CZ1 AC SD 125/160/200/250/315A



Swich Mounting Holes

Mounting Orientation



Enclosure size and enclosure mounting







CZ1 AC SD 125/160/200/250/315A



	Termination	Capacity	
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			125/160/200/250A	315A
	TERMINATION CAPACITY AS PER STANDARD	Cable With Lug	1 X185mm ²	1X240 mm ²
	MAXIMUM TERMINATION	Cable With Lug	2 X185mm ²	2 X 240mm ²
	CAPACITY	Busbar*	2 X 35mm X 10mm	2 X 35mm X 10mm
TIGHTENING TORQUE		UE	MAX 20 N-m AT TERMINATION	MAX 20 N-m AT TERMINATION

Note: For Aluminum cable, Tin plated lugs are recommended.

Termination bolt head should be on bottom side as shown in figures

*: Higher length (M10 X 40 for 250A; M12 X 40 for 315A) of termination bolt required to connect 2 busbar of 10mm.



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PANEL HANDLE VERSION

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DIRECT HANDLE VERSION

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Panel Door

Rating (A)	No. of Poles	А	В	с	D	E	F
	2P	181	206	32	90	186	4
315/400	3P	181	206	32	155	251	4
	4P(SIDE)	181	206	32	220	316	4
	4P(CENTRE)	181	206	32	180	316	4
630	2P	184	222	45	90	186	5
	ЗP	184	222	45	155	251	5
	4P(SIDE)	184	222	45	220	316	5
	4P(CENTRE)	184	222	45	180	316	5







No. of Poles	А	В
2P	90	0
ЗP	155	0
4P - SIDE	220	0
4P - CENTER	180	90

owner mounting noice

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Reference

 \Box

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Enclosure size and enclosure mounting









2. Adjust/Cut the shaft as per panel requirement.(Min. Engagement Length,X=60mm Inside Mechanism)

Recommended Termination Arrangements





With Single Lug

With Double Lugs Insulation plate is recommended on bottom side for double lug connection



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With Single Busbar



(Torque : 1.6 N-mTighten)

With Double Busbars

			315/400A	630A
CAPACITY AS PESTANDARD MAXIMUM TERMINATION CAPACITY	TERMINATION CAPACITY AS PER STANDARD	Cable With Lug	2 X150mm ²	2 X 300mm ²
		Busbar*	2 X 25mm X 10mm	2 X 30mm X 12mm
		Cable With Lug	2 X 300mm ²	2 X 300mm ²
		Busbar*	2 X 50mm X 12mm	2 X 50mm X 12mm
	TIGHTENING TORQI	UE	MAX 27 N-m AT TERMINATION	MAX 27 N-m AT TERMINATION

Note: For Aluminum cable, Tin plated lugs are recommended. Termination bolt head should be on bottom side as shown in figures

1. Auxiliary Contact Installation for Direct Handle Version



1.1. Open Locking Tag



1.2. Unscrew the Handle from Switch





1.3. Remove Handle from Switch



1.4. Unscrew and Remove Aux cover



1. Auxiliary Contact Installation for Direct Handle Version

1.5. Insert Auxiliary contact assembly in slot provided in switch





1.6. Assemble Aux cover and Handle with Screws



Ensure Routing of wires through the cut out provided in Housing



2. Auxiliary Contact Installation Instructions For Panel Handle Version and Bypass Switch

2.1. Remove Shaft clamp assembly and Shaft from switch





2.2. Unscrew and Remove Aux cover from switch



2.3. Insert Auxiliary contact assembly in slot provided in switch



2.4. Assemble Aux cover with screws



Ensure Routing of wires through the cut out provided in Housing



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Product inprovement is a continuous process, For the latest information and special application, please contact any of our offices listed here. Product photographs shown for representive purpose only.

L&T SWITCHGEAR

SAFE & SURE

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